cies (subg. *Viscagoga*) are found in wet forest canopy or sometimes in the subcanopy near light gaps. The vegetative portions of the plants are usually glabrous but may be puberulous, pilosulous, or villosulous with rather short trichomes, or in a few species, notably *N. lanosa*, they may be densely villous with trichomes 1–2.5 mm long. Both vegetative and reproductive tissues contain raphides that are usually densely distributed relative to most Psychotrieae, and easily visible in dried specimens.

The leaves are opposite, and in subgenus *Notopleura* often have well-developed petioles and relatively large blades, in some species to 40 cm long. The succulent leaves may have a tough or more often a thin delicate texture when dry. In life they are often silvery or dark and velvety on one or both surfaces, and frequently the abaxial (i.e., lower) leaf surface is paler or shinier than the adaxial surface. The secondary veins are usually visible, and are usually plane on the adaxial surface and prominulous on the abaxial surface; no domatia have been found associated with them, or elsewhere on the leaves. In several species the secondary veins unite in a clear submarginal collecting vein (e.g., Fig. 5D). Higher-order leaf venation is usually not readily visible in any species of *Notopleura*, and in a few species of both subgenera the secondary veins are not visible either (e.g., Figs. 2A, 2H).

The stipules of species of *Notopleura* in part distinguish this genus: they are united around the stem (and sometimes also to the petioles), into a sheath that bears in the center (i.e., medially) of each interpetiolar side a distinctive appendage. This stipule sheath may be reduced to a line but is usually well developed with a truncate to broadly triangular outline, and may be caducous or persistent. The interpetiolar appendages vary widely in form, and are sometimes distinctive for a particular species. These appendages may be well developed to reduced or in a few species (e.g., *N. congesta* C. M. Taylor) apparently secondarily absent, and either caducous or persistent. In most species of both subgenera, the stipule sheath is rather well developed and the appendage is conical to linear, 3 mm long or shorter, succulent, divergent from the stem, and entire to shortly bifid, bilobed, or fimbriate at the apex with the adaxial surface or the apical projections usually glandular (e.g., Figs. 3A, 3H, 4A, 6A, 6D). In some species this interpetiolar appendage is expanded into a membranaceous to papyraceous, lanceolate to ovate or elliptic lamina. This laminar appendage is often evidently medial in its insertion in the sheath, but in some species the sheath is reduced to a line of tissue and the lamina appears terminal on it or even directly connected to the petioles (e.g., Fig. 2E). The margins of these laminar appendages are typically slightly to strongly erose or laciniate, with the marginal projections often apparently glandular. In many species of subgenus *Notopleura*, the stipule appendages are very succulent and consequently on dried specimens their shape may be difficult to discern. Thus although stipule form is useful for distinguishing species of *Notopleura*, it has been little used in this group and herbarium specimens are often not very informative. The stipule descriptions presented here are based almost exclusively on herbarium specimens, so certainly study of living plants will reveal additional features.

The inflorescences of *Notopleura* are terminal or pseudoaxillary (i.e., they are produced in a terminal position developmentally but the stem grows from a developmentally axillary bud, so the inflorescence is found in only one axil at each node). In subgenus *Viscagoga*, the inflorescences are pedunculate and paniculate with several orders of branching, and the flowers are pedicellate in few-flowered cymules. In subgenus *Notopleura*, the inflorescences vary from sessile to long-pedunculate, and from capitate (e.g., Figs. 4D, 6J) to paniculiform with several degrees of branching (e.g., Figs. 1H, 2A). The flowers may be pedicellate but are more often sessile or subsessile, and the fruits are also usually sessile but sometimes subsequently develop a stipitate basal extension as they mature (e.g., Fig. 3A). The flowers and fruits may be distributed along the axes singly or in small glomerules (e.g., Fig. 3I), or they may be grouped into larger glomerules that are all apical on the axes (e.g., Fig. 5D, 5I). The inflorescence axes are usually dichasial in development at least at lower nodes, though in many species they become monochasial or cincinnoid later in development or in higher-order axes, with the flowers or glomerules alternate and well separated along them. Branched inflorescences have two or frequently three axes at the branching nodes; this latter condition is unusual in the Rubiaceae. The inflorescence axes are usually subtended by bracts that are situated at the branching nodes. The floral glomerules are also usually subtended by bracts, and the individual flowers are usually subtended by floral bracts (i.e., bracteoles). The capitate inflorescences appear to have an arrangement similar to that found in the branched inflorescences, except with the bracts usually exceptionally well developed and the axes not or hardly developed. In several species the inflorescences are capitate at anthesis but expand as the fruits develop (e.g., Fig. 2H).

The flowers are similar among species of *Noto-*

pleura in their relatively small size and usually white corollas, and are apparently diurnal and insect-pollinated. Some species are distylous[3] but others appear to be monomorphic. The flowers have not been described in detail or used to separate species by most previous authors, but they do present several distinctive characters, as noted below. No published pollination studies have been found for *Notopleura*, and no odors or floral visitors have been noted in the collection data for the specimens studied.

The hypanthium (i.e., ovary) portion of the flowers is turbinate to cylindrical or ellipsoid and usually about 1 mm long at anthesis. This structure is generally similar among the species of *Notopleura*, while the calyx limb (i.e., the free portion of the calyx that extends from the top of the hypanthium, also sometimes called the calyx cup or simply the calyx) is more variable in form (e.g., Figs. 1F, 2C, 2G, 4B). The calyx limb usually has a short tubular portion, usually 1 mm long or shorter, and a margin that varies from truncate to deeply four- or five-lobed, with the lobes as much as 6 mm long.

The corollas of *Notopleura* are funnelform to somewhat tubular, white or rarely orange to yellow (e.g., *N. marginata* (Benth.) Bullock), and five-lobed, or in some species of subgenus *Viscagoga* four-lobed, or infrequently six-lobed in occasional anomalous flowers of various species. The corolla lobes are valvate, and those of several species are thickened on their abaxial surfaces (e.g., Figs. 3B, 6H); in some species, these thickenings may be prolonged into pronounced appendages (e.g., Figs. 2D, 5E). Externally, the corolla may be glabrous or pubescent throughout, with the pubescence often less or more dense on the lobes, or infrequently markedly denser only on the corolla lobe appendages. This external pubescence pattern apparently varies within as well as among species. Internally the corolla may be glabrous throughout or more often has a pubescent ring at or above the middle of the tube or sometimes in the throat; the internal pubescence pattern appears to be consistent within species.

The stamens are five, or four in flowers with four corolla lobes, and are inserted at or above the middle of the corolla tube with the filaments very short to well developed. The anthers are narrowly oblong, and may be included or exserted. The stigmas are two, four, or rarely six (e.g., some plants of *N. epiphytica* (K. Krause) C. M. Taylor), linear, and positioned variously from near the middle of the corolla tube to well exserted. The style is surrounded at the base by a low annular disk. Distyly is predominant in Psychotrieae (Taylor, 1996), and is certainly present in many species of *Notopleura* (e.g., *N. aggregata* (Standl.) C. M. Taylor, Monteverde Reserve, Costa Rica, pers. obs.) with flowers that show reciprocal positioning of anthers and stigmas with usually only one of these exserted. However, the presence of distyly seems unlikely in some species of *Notopleura*, which on herbarium specimens have the anthers and stigmas both exserted and positioned at nearly the same level (e.g., *N. scarlatina* C. M. Taylor). Overall, relatively few herbarium collections of any species of *Notopleura* have flowers at anthesis in good condition, so these conclusions are provisional.

The fruits of *Notopleura* are spongy or succulent drupes about 1–1.5 cm in diameter, which are assumed to be dispersed by birds. At maturity the fruits may be white, orange, red, or black. In some species (e.g., *N. polyphlebia* (Standl.) C. M. Taylor, *N. uliginosa* (Sw.) Bremek.) the drupes pass through rather orange or red immature stages and then quickly become black, apparently overnight, and are rapidly removed by frugivores, so care must be taken in determining mature fruit color. For some species the fruit color has been reported as variable, but mature fruit color is here considered generally consistent within a species and thus taxonomically informative. In particular, Steyermark (1972) included in *N. macrophylla* (Ruiz & Pav.) C. M. Taylor plants with white, yellow-green, and red fruits, but here *N. macrophylla* is restricted to plants with white fruits. The fruits of *Notopleura* contain two, four, or rarely six (e.g., *N. epiphytica*) pyrenes. When the pyrenes number four to six they are triangular in cross section with two adaxial (i.e., ventral) faces; when they number two, they are hemispherical or dorsiventrally flattened in cross section with only one adaxial face. On the adaxial face or faces the pyrenes may be smooth or may have one longitudinal central ridge or two to three shallow longitudinal depressions; on the abaxial face the pyrenes may be smooth or ridged, in the latter case with one central ridge or three to five smaller ridges and the margins also sometimes thickened. The pyrenes open through two small germination slits near the basal end, a characteristic that is apparently unique in the tribe and in part distinguishes *Notopleura* (Nepokroeff, 1997).

---

[3] Distyly (heterostyly with two style lengths) is a common condition in the Rubiaceae, in which flowers of two forms (morphs) are found in a single species: in the short-styled form (thrum) the styles are relatively short so the stigmas are positioned below the anthers, and the anthers are usually exserted or positioned at the corolla throat on well-developed filaments; in the long-styled form (pin) the styles are well developed so the stigmas are exserted or positioned in the corolla throat, and the anthers are positioned below them on relatively short filaments. Typically the positions of the anthers and stigmas in one floral form correspond to the positions of the stigmas and anthers, respectively, in the other floral form. Pollination is thus preferentially between floral forms rather than among flowers of the same form, and this preference is reinforced (in the taxa so far studied) by an incompatability system. An individual plant bears flowers of only one form, and usually long-styled and short-styled plants are found in equal proportions in the population of a given area.

TAXONOMIC TREATMENT

The following treatment is based on review of literature and specimens from the herbaria listed in the acknowledgments. The species in each subgenus are presented in alphabetical order. *Notopleura standleyana* (Steyerm.) C. M. Taylor of Venezuela is not included in the key to species of subgenus *Notopleura* because its original description did not include adequate information on the characters here considered distinctive, and the specimens seen of this species are inadequate for determination of this missing information.

Notopleura (Benth. & Hook. f.) Bremek., Rec. Trav. Bot. Néerl. 31: 289. 1934. *Psychotria* sect. *Notopleura* Benth. & Hook. f., Gen. Pl. 2: 124. 1874. TYPE: *Notopleura marginata* (Benth.) Bullock.

Plants rather succulent, terrestrial (subg. *Notopleura*) or epiphytic (subg. *Viscagoga*) herbs or subshrubs; stems branched or unbranched, erect or sometimes climbing, clambering, or reclining. Leaves paired, petiolate, decussate, without domatia; stipules united around the stem and/or to the petioles into a sheath usually bearing an interpetiolar appendage or rarely this absent, when present the appendage succulent, persistent or caducous, medial, conical to linear, entire to bilobed or apically fimbriate, and usually glandular, or less often the appendage laminar, membranaceous to papyraceous, medial or terminal, elliptic to ovate, and entire to erose or laciniate (subg. *Notopleura*). Inflorescences terminal (subg. *Viscagoga*) or pseudoaxillary (subg. *Viscagoga*, subg. *Notopleura*), sessile to pedunculate, capitate to paniculiform, bracteate; flowers distylous or apparently sometimes monomorphic; calyx limb 5(6)-lobed or occasionally 4-lobed (subg. *Viscagoga*); corolla funnelform to somewhat tubular, externally and internally glabrous or variously pubescent, lobes 5(6) or occasionally 4 (subg. *Viscagoga*), valvate in aestivation, sometimes abaxially thickened or appendaged; stamens 5 or occasionally 4 (subg. *Viscagoga*), inserted in corolla tube, anthers exserted or included; stigmas 2 or sometimes 4 (subg. *Viscagoga*) or rarely 6 (subg. *Viscagoga*), linear, exserted or included, style surrounded at base by an annular disc. Fruit fleshy, drupaceous, at maturity orange, red sometimes becoming black at maturity, or white; pyrenes 2 to 6, when 3 to 6 then triangular in cross section, when 2 then hemispherical to dorsiventrally flattened in cross section, on the abaxial face smooth or with 1 to 5 longitudinal ridges and the margins sometimes also thickened, on the adaxial face smooth, with a central longitudinal ridge, or with 1 to 3 shallow longitudinal depressions.

About 62 species, Mexico and the Antilles to the Guianas, Brazil, and Bolivia, in wet formations from sea level to montane forest. The typification of this genus is discussed by Bullock (1958).

KEY TO THE SUBGENERA OF *NOTOPLEURA*

1a. Plants terrestrial, usually unbranched, usually erect; stipules with interpetiolar appendage succulent, or expanded into a lamina, or absent; inflorescences pseudoaxillary; pyrenes 2, in cross section hemispherical to strongly dorsiventrally flattened .... subg. *Notopleura*

1b. Plants epiphytic, usually branched, often clambering or climbing; stipules with interpetiolar appendage succulent or absent; inflorescences terminal or pseudoaxillary; pyrenes 2 to 6, in cross section hemispherical to triangular or somewhat dorsiventrally flattened .... subg. *Viscagoga*

Notopleura subg. **Notopleura**

Montamans Dwyer, Ann. Missouri Bot. Gard. 67: 285. 1980. TYPE: *Montamans panamensis* Dwyer ≡ *Notopleura panamensis* (Dwyer) C. M. Taylor.

Plants terrestrial; stems usually unbranched, generally erect. Stipules with interpetiolar appendages succulent and conical to ovate or linear, or expanded into a membranaceous to papyraceous lamina, or rarely absent. Inflorescences pseudoaxillary; calyx limb 5-lobed; corolla 5(6)-lobed, the lobes sometimes horned or appendaged. Fruit yellow, orange, red sometimes becoming black at maturity, or white; pyrenes 2, in cross section hemispherical to dorsiventrally flattened, on the abaxial face smooth or with 1 to 5 longitudinal ridges, on the adaxial face smooth or with 1 central longitudinal ridge or 1 to 3 shallow longitudinal depressions.

About 52 species, Mexico and the Antilles to the Guianas, Brazil, and Bolivia, in wet formations from sea level to upper montane forest.

Key to the Species of *Notopleura* Subg. *Notopleura*

1a. Leaves with margins markedly thickened and cartilaginous; calyx limbs 3–4 mm long .... *N. macropodantha*

1b. Leaves with margins membranaceous to cartilaginous but not markedly thickened; calyx limbs 0.2–4 mm long.

2a. Inflorescences at anthesis capitate to subcapitate with the axes not visible, sometimes expanding as fruits develop.

3a. Stems, petioles, stipules, and leaves on both surfaces lanose to villous with trichomes 1–2.5 mm long .... *N. lanosa*

3b. Stems, petioles, stipules, and leaf surfaces glabrous or sometimes puberulous to pilosulous, hirtellous, or villosulous with trichomes < 1 mm long.

4a. Inflorescences and infructescences sessile or with peduncles shorter than or equal to petioles.

5a. Mature pyrenes smooth on abaxial (i.e., dorsal) surface.

6a. Stipules with sheaths developed, truncate to broadly rounded, without interpetiolar appendages; calyx limbs 1–1.5 mm long .... *N. congesta* (p.p.)

6b. Stipules with sheaths reduced, with appendages expanded and laminar; calyx limbs 2–4 mm long.

7a. Stipules 2–5 mm long, laciniate with the segments often terminating in filaments; French Guiana .... *N. lateralis*

7b. Stipules 5–15 mm long, erose to deeply so, the segments acute but usually not terminating in filaments; Central America and western South America.

8a. Leaves drying subcoriaceous to chartaceous, with the secondary veins not visible on the abaxial surface; Costa Rica to Panama .... *N. camponutans*

8b. Leaves drying papyraceous, with the secondary veins visible on the abaxial surface; Panama to Peru .... *N. plagiantha*

5b. Mature pyrenes with 1 to 3 longitudinal ridges on abaxial surface.

9a. Stipules with sheaths reduced and lanceolate to ovate or elliptic interpetiolar laminas 5–20 mm long.

10a. Stipules persistent with the leaves .... *N. latistipula*

10b. Stipules caducous before the leaves.

11a. Leaves with secondary veins 13 to 17 pairs .... *N. araguensis*

11b. Leaves with secondary veins 10 to 12 pairs .... *N. thesceloantha*

9b. Stipules with sheaths developed, truncate to triangular, 0.5–5 mm long, with interpetiolar appendages absent or narrowly triangular to linear or conical.

12a. Leaves with secondary veins not or hardly visible on the abaxial surface; inflorescences sessile or subsessile, with the peduncles elongating as the fruits develop .... *N. iridescens* (p.p.)

12b. Leaves with secondary veins clearly visible on the abaxial surface; inflorescences sessile or pedunculate, the peduncles usually not elongating as the fruits develop.

13a. Inflorescences enclosed by 2 to 6 ovate to lanceolate, involucral bracts 5–20 mm long; fruits orange or red becoming black at maturity.

14a. Plants glabrous or usually villosulous or pilosulous; leaves elliptic to oblanceolate, 3.5–5 cm wide, at apex sharply acute to acuminate and rather tapered .... *N. acuta*

14b. Plants glabrous or puberulous; leaves elliptic to broadly so or elliptic-oblong, 5–15 cm wide, at apex broadly rounded to obtuse, acute, or deltoid, sometimes shortly acuminate but not tapered .... *N. leucantha* (p.p.)

13b. Inflorescences with numerous lanceolate to ovate bracts 2–8 mm long, these external but not involucral; mature fruits red or white.

15a. Calyx limbs 2.5–4 mm long.

16a. Corolla lobes abaxially with appendages 3.5–4 mm long .... *N. panamensis*

16b. Corolla lobes abaxially smooth .... *N. uberta*

15b. Calyx limbs 0.5–2 mm long.

17a. Fruits red at maturity .... *N. palestinae* (p.p.)

17b. Fruits white at maturity.

18a. Floral bracts lanceolate, 8–10 mm long; Venezuela .... *N. decurrens*

18b. Floral bracts lanceolate to ovate, 2–5 mm long; Nicaragua to northwestern Colombia .... *N. tonduzii*

4b. Inflorescences and infructescences with peduncles longer than petioles.

19a. Leaves plane or often bullate, with secondary veins prominulous on adaxial surface .... *N. polyphlebia*

19b. Leaves plane, with secondary veins plane on adaxial surface.

20a. Leaves with secondary veins not or hardly visible on abaxial surfaces; pyrenes dorsiventrally flattened, on abaxial face with 1 or 3 longitudinal ridges ..... *N. iridescens* (p.p.)

20b. Leaves with secondary veins clearly visible on abaxial surfaces; pyrenes hemispherical in cross section, on abaxial face smooth or with 1 longitudinal ridge.

21a. Pyrenes dorsiventrally flattened in cross section, on abaxial face with a longitudinal ridge; inflorescences hemispherical to depressed-globose ..... *N. leucantha* (p.p.)

21b. Pyrenes hemispherical in cross section, on abaxial face smooth; inflorescences pyramidal to cylindrical or ovoid ..... *N. pyramidata*

2b. Inflorescences at anthesis branched with the axes clearly evident.

22a. Stipules with sheaths reduced and interpetiolar appendages expanded into laminas that are broader than the stem diameter; pyrenes on abaxial face with 3 to 5 longitudinal ridges, or smooth in *N. callejasii.*

23a. Inflorescences sessile or with peduncles to 1.5 cm long, the peduncles shorter than the principal axes of the inflorescence.

24a. Floral bracts acute to obtuse; calyx limbs ca. 2 mm long ..... *N. micayensis*

24b. Floral bracts obtuse to rounded or truncate; calyx limbs ca. 1 mm long ..... *N. wilburiana*

23b. Inflorescences with peduncles 2.5–25 cm long, the peduncles equal to or usually longer than the principal axes of the inflorescence.

25a. Leaves drying subcoriaceous to chartaceous, with the secondary veins not or hardly visible on the abaxial surface.

26a. Inflorescence bracts oblong to elliptic or lanceolate, those subtending the basalmost secondary axes equal to or longer than the first internodes of these axes; Venezuela ..... *N. sucrensis*

26b. Inflorescence bracts narrowly triangular or narrowly ligulate to linear, those subtending the basalmost secondary axes shorter than the first internodes of these axes; western Colombia and Ecuador.

27a. Calyx limbs ca. 0.8 mm long; Ecuador ..... *N. albens*

27b. Calyx limbs 3–4.5 mm long; Colombia ..... *N. callejasii*

25b. Leaves drying papyraceous to membranaceous, with the secondary veins visible on the abaxial surface.

28a. Inflorescences in profile corymbiform-rounded, with their basalmost nodes producing 2 or usually 3 to 4 secondary axes, these all generally equal in length to the primary axis; corollas orange to yellow or sometimes white on tube ..... *N. marginata*

28b. Inflorescences in profile pyramidal to rounded or cylindrical, with their basalmost nodes producing 2 or sometimes 3 secondary axes that are clearly shorter than the primary axis; corollas white.

29a. Inflorescence bracts lanceolate to narrowly triangular, equal to or longer than the flower buds but narrow and leaving visible the buds, the calyx limbs at anthesis, and the developing fruits ..... *N. longipedunculata*

29b. Inflorescence bracts elliptic to ovate, broad enough to completely cover the flower buds, the calyx limbs at anthesis, and the developing fruits.

30a. Calyx limbs 3–4 mm long; secondary leaf veins eucamptodromous ..... *N. longissima*

30b. Calyx limbs 1–2 mm long; secondary leaf veins brochidodromous.

31a. Secondary leaf veins 9 to 13 pairs; peduncles 2.5–9 cm long ..... *N. dukei*

31b. Secondary leaf veins 18 to 22 pairs; peduncles 6–29 cm long ..... *N. lateriflora*

22b. Stipules with sheath developed, truncate to rounded or broadly pyramidal and interpetiolar appendage lacking or usually present, conical to lanceolate, obovate, or ligulate, narrower than the diameter of the stem; pyrenes on abaxial face smooth or with 1 to 5 longitudinal ridges.

32a. Leaves truncate at base; petioles 0.5–1 cm long ..... *N. subimbricata*

32b. Leaves acute to obtuse or caudate at base; petioles 1–15 cm long.

33a. Mature pyrenes in cross section hemispherical to triangular and inflated, abaxially smooth or with 1 to 5 low longitudinal ridges and the margins not or somewhat thickened.

34a. Fruits red to orange at maturity (color unknown in *N. cundinamarcana*); mature pyrenes smooth abaxially.

35a. Stipule sheaths 3–7 mm long.

36a. Young stems glabrous or puberulous with the trichomes appressed.

37a. Peduncles 1–8.5 cm long; flowering portion of inflorescence 2.5–4.5 × 2.5–6 cm; calyx limbs 2.5–5 mm long; corolla tubes 5–6 mm long ..... *N. cundinamarcana*

37b. Peduncles 0.7–1.1 cm long; flowering portion of inflorescence

1.5 × 2–2.5 cm; calyx limbs ca. 0.5 mm long; corolla tubes 1.5–2 mm long .... *N. saulensis*

36b. Young stems pilosulous or hirtellous with spreading trichomes.

38a. Inflorescences with floral bracts 0.5–1.2 mm long, rounded to obtuse, incompletely enclosing the flower buds .... *N. pilosula*

38b. Inflorescences with floral bracts 2–5 mm long, acute to obtuse, completely enclosing the flower buds .... *N. siggersiana*

35a. Stipule sheaths 0.5–2.5 mm long.

39a. Inflorescences with peduncles 8–23 cm long; infructescences 14–22 cm wide at widest point; Guatemala and Honduras .... *N. hondurensis*

39b. Inflorescences with peduncles 1–11 cm long; infructescences 1.5–12 cm wide at widest point; eastern Panama to Peru.

40a. Corolla lobes abaxially smooth; peduncles 2–11 cm long; branched portions of inflorescences 2.5–11 cm long.

41a. Leaves 3–5.5 cm wide; eastern Panama .... *N. angustissima*

41b. Leaves 8–12.5 cm wide; Ecuador .... *N. scarlatina*

40b. Corolla lobes abaxially with short conical to linear appendages, these evident at least in bud; peduncles 0.4–5.5 cm long; branched portions of inflorescences 1–4.5 cm long.

42a. Stipules without interpetiolar appendages .... *N. congesta* (p.p.)

42b. Stipules with interpetiolar appendages.

43a. Inflorescences with branched portions 0.6–1.8 cm long; stipule sheaths 2–3 mm long; central Panama to western Colombia .... *N. palestinae* (p.p.)

43b. Inflorescences with branched portions 1–4.5 cm long; stipule sheaths 0.5–1.5 mm long; Amazonian Colombia to Peru .... *N. parasiggersiana*

34b. Fruits white at maturity (color unknown in *N. humensis*); mature pyrenes abaxially 1 to 5 longitudinal ridges.

44a. Leaves 3–5.5 cm wide; inflorescences with branched portions 1–2 cm long; corolla lobes abaxially with appendages; French Guiana .... *N. microbracteata*

44b. Leaves 2–15 cm wide; inflorescences with branched portions 2–15 cm long; corolla lobes abaxially smooth or with appendages; Mexico and the Antilles to Bolivia and the Guianas.

45a. Corolla lobes abaxially with appendages; Jamaica and the Lesser Antilles .... *N. discolor*

45b. Corolla lobes abaxially smooth; Mexico and Central America to central South America.

46a. Leaves elliptic to broadly elliptic or elliptic-oblong, with at least some secondary veins extending to and uniting with the margins; peduncles 1–7 cm long; mature pyrenes triangular to somewhat inflated in cross section .... *N. macrophylla*

46b. Leaves narrowly elliptic to oblanceolate or lanceolate, with secondary veins weakly brochidodromous; peduncles 3–16 cm long; mature pyrenes hemispherical in cross section .... *N. tolimensis*

33b. Mature pyrenes in cross section dorsiventrally markedly flattened, abaxially with 1 to 3 longitudinal ridges and the margins smooth to thickened.

47a. Leaves narrowly elliptic, with secondary veins not visible on the abaxial surface.

48a. Leaves tapering to a long-acute or attenuate base; bracts subtending the secondary inflorescence axes equal to or usually much shorter than the first internodes of the secondary axes .... *N. tapajozensis*

48b. Leaves tapering to an obtuse or abruptly truncate base; bracts subtending the secondary inflorescence axes equal to or usually longer than the first internodes of the secondary axes.

49a. Leaf bases rounded to truncate; bracts subtending the secondary inflorescence axes 17–30 × 5–14 mm .... *N. aneurophylla*

49b. Leaf bases obtuse; bracts subtending the secondary inflorescence axes 15–18 × 8 mm .... *N. aneurophylloides*

47b. Leaves narrowly to broadly elliptic, obovate, or oblanceolate, with secondary veins visible on abaxial surface.

50a. Leaves with secondary veins 30+ pairs, prominulous on the adaxial surface .... *N. agostinii*

50b. Leaves with secondary veins 30 or fewer pairs, impressed to plane or sometimes a little thickened on the adaxial surface.

51a. Leaves with secondary veins impressed on both surfaces .... *N. chapensis*

51b. Leaves with secondary veins plane to thickened on both surfaces.

- 52a. Leaf bases decurrent on the petiole .... *N. humensis*
- 52b. Leaf bases not decurrent on the petiole.
  - 53a. Mature fruits orange, red, or black.
    - 54a. Leaves pilosulous to villosulous on the abaxial surface; inflorescences with 2 or usually 3 secondary axes at the basal node.
      - 55a. Leaves 8–16 cm long; inflorescences with branched portions 1–3 cm long; pyrenes 6–8 × 4.5–5.5 mm .... *N. aequatoriana*
      - 55b. Leaves 9–32 cm long; inflorescences with branched portions 5.5–13 cm long; pyrenes 4–5.5 × 4–5 mm .... *N. triaxillaris*
    - 54b. Leaves glabrous to puberulous on the abaxial surface; inflorescences with 2 or occasionally 3 secondary axes at the basal node.
      - 56a. Floral bracts ovate to elliptic, 3–5 mm long; calyx limbs truncate, 1.5–2 mm long .... *N. fernandezii*
      - 56b. Floral bracts suborbicular, ovate, lanceolate, or triangular to narrowly so, 0.1–2 mm long; calyx limbs lobed, 0.1–2 mm long.
        - 57a. Leaves usually with intersecondary veins not visible on the abaxial surface; floral bracts reduced, hardly evident; flowers borne in umbelliform or racemiform cymules of 3 to 10 .... *N. uliginosa*
        - 57b. Leaves with intersecondary veins visible on the abaxial surface; floral bracts developed, evident; flowers borne singly or in glomerules or dichasial cymules of 2 to 3.
          - 58a. Leaves 4–8 cm wide; floral bracts 2–4 mm long; pyrenes at maturity dorsiventrally flattened .... *N. patria*
          - 58b. Leaves 9–17 cm wide; floral bracts 0.5–1.5 mm long; pyrenes at maturity triangular to umbonate in cross section .... *N. steyermarkiana*
  - 53b. Mature fruits white (color unknown in *N. perparva*).
    - 59a. Flowers grouped in glomerules of 4+, the glomerules borne at the ends of the inflorescence axes and enclosed by lanceolate to ovate bracts that are longer than the hypanthium plus calyx limb.
      - 60a. Leaves 4–12.5 cm wide, with secondary veins 9 to 16 pairs, eucamptodromous or weakly brochidodromous in apical part of blade .... *N. aggregata*
      - 60b. Leaves 7–24 cm wide, with secondary veins 16 to 30 pairs, markedly brochidodromous throughout.
        - 61a. Peduncles 7–20 cm long; calyx limbs 0.8–1.5 mm long, very shallowly lobed; corolla lobes abaxially smooth .... *N. submarginalis*
        - 61b. Peduncles 4–8.5 cm long; calyx limbs 1.2–2 mm long, lobed for ¼–¾ their length; corolla lobes abaxially with conical appendages.
          - 62a. Secondary leaf veins 16 to 22 pairs; western Panama .... *N. nepokroeffiae*
          - 62b. Secondary leaf veins 26 to 30 pairs; eastern Panama .... *N. perparva*
    - 59b. Flowers borne singly or in glomerules of 2 to 3, the flowers or glomerules distributed along spiciform inflorescence axes and subtended but not enclosed by triangular bracts that are usually shorter than the hypanthium plus calyx limb.

63a. Peduncles in fruit 7–20 cm long; floral bracts absent or very reduced and hardly evident; Venezuela .... *N. terepaimensis*
63b. Peduncles in fruit 0.8–22 cm long; floral bracts developed and evident; Costa Rica to Bolivia.
  64a. Mature pyrenes abaxially with 3 longitudinal ridges, these equally spaced and similar .... *N. anomothyrsa*
  64b. Mature pyrenes with 1 or 2 closely set central longitudinal ridges, sometimes also with 1 equally spaced lateral ridge but these less well developed.
    65a. Leaves glabrous or puberulous adaxially, pilosulous to glabrescent abaxially; peduncles 7–22 cm long; Costa Rica to Peru .... *N. capacifolia*
    65b. Leaves pilose or villosulous on both surfaces; peduncles 0.8–5.5 cm long; southern Ecuador to Peru .... *N. cincinalis*

Notopleura acuta C. M. Taylor, sp. nov. TYPE: Ecuador. Napo: Estación Biológica Jatun Sacha, 450 m, 2 July 1990, *T. Flynn, R. Peckinpaugh & R. Yamakawa 4025* (holotype, MO-4312901; isotypes, PTBG-10899, QCNE not seen). Figure 1A–C.

Haec species a congeneris foliis apice acutis nonnunquam acuminatis, inflorescentia capitata nutante, stipitibus sub fructu usque ad 5 mm longis accrescentibus atque pyrenis dorsiventraliter complanatis marginibus aliquam incrassatis distinguitur.

Terrestrial herbs or subshrubs to 1 m tall, rather succulent, apparently unbranched; stems glabrous or villosulous to pilosulous, becoming glabrescent with age. *Leaf blades* elliptic to oblanceolate, 9.5–17 × 3.5–5 cm, at apex acute to sometimes acuminate, at base acute to cuneate, drying papyraceous to membranaceous, glabrous or pilosulous to villosulous usually becoming glabrescent with age, abaxially sometimes paler; secondary veins 7 to 10 pairs, extending nearly to margins; petioles 1.5–3 cm long, glabrous or pilosulous to villosulous, becoming glabrescent; stipules with sheath 0.5–1.5 mm long, broadly triangular to rounded, entire, glabrous or villosulous, becoming glabrescent, with interpetiolar appendage conical, to 2 mm long, caducous or occasionally persistent. *Inflorescences* pseudoaxillary, pilosulous to villosulous, capitate, nodding, with peduncle 2–5 mm long, head hemispherical to depressed-globose, 5–8 mm diam.; outermost bracts triangular to lanceolate, 4–8 mm long, acute, entire, floral bracts 3–5 mm long; *flowers* sessile, not seen. *Infructescences* subcapitate to contracted-cymose, with peduncles to 15 mm long; *fruits* ellipsoid, 5–6 × 4–5 mm, red becoming black at maturity, with stipes to 5 mm long, with persistent calyx limbs 1–1.5 mm long, lobed for ca. ½ their length, the lobes triangular to narrowly so; pyrenes dorsiventrally flattened, dorsal surface smooth except for 1 low, sharp, central, longitudinal ridge and thickened margins.

Habitat, distribution, and phenology. Ecuador to northern Peru, in wet forest at 140–450 m; collected in flower January, June, and July, in fruit January, May–August.

This species is distinguished by its leaves that are acute to acuminate at the apex, its capitate nodding inflorescences, its fruiting stipes up to 5 mm long, and its dorsiventrally flattened pyrenes that have one sharp, central, longitudinal ridge on the abaxial surface and the margins somewhat thickened. This species has been confused with *Notopleura plagiantha* (Standl.) C. M. Taylor; *N. plagiantha* differs in its fruits that remain subsessile or sessile at maturity and its calyx limbs ca. 2 mm long with linear lobes. The specific epithet refers to the acutely angled leaf apices, which are uncommon in *Notopleura* and a distinguishing character for this species.

Paratypes. ECUADOR. **Napo:** Estación Biológica Jatun Sacha, Río Napo, 8 km al E de Misahuallí, 1°04′S, 77°36′W, *Cerón 1650* (MO), *Gentry et al. 60261* (MO), *Miller et al. 2175* (MO). **Pastaza:** cantón Puyo, Pambayucua, Río Lliquino, 1°29′S, 77°22′W, *Palacios 10155* (MO, QCNE); cantón Pastaza, Villano-Pandanuque, junto al Río Villano, 1°30′S, 77°27′W, *Palacios 10338* (MO, QCNE). PERU. **Loreto:** provincia Maynas, distrito Iquitos, carretera del Varillal, trocha del puesto "El Virosal", cerca al vivero forestal, *Rimachi 6857* (MO).

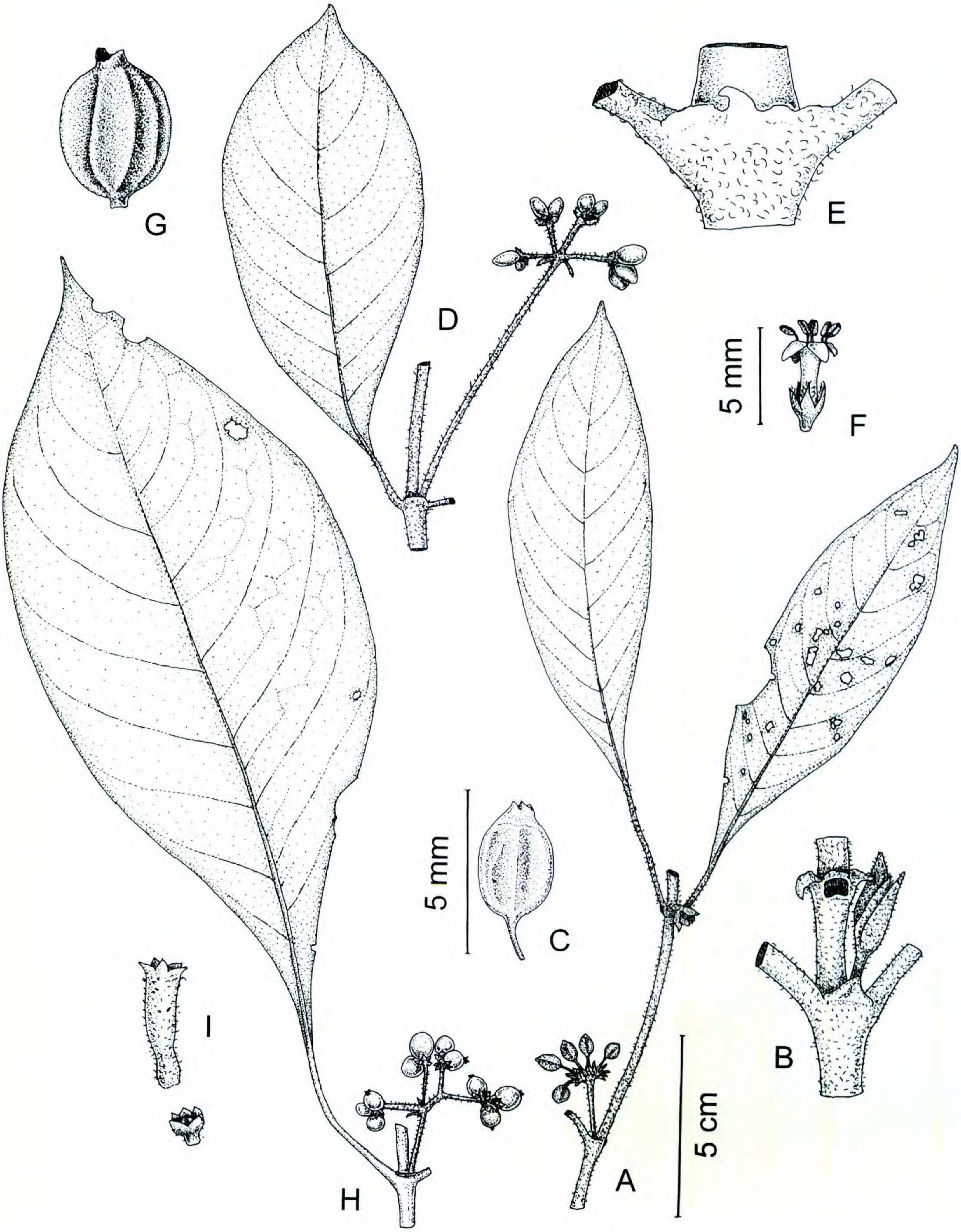

Figure 1. A–C, *Notopleura acuta* C. M. Taylor. —A. Portion of branch with young inflorescence and infructescence. —B. Stem portion showing stipules. —C. Dry immature fruit. D–G, *Notopleura aequatoriana* C. M. Taylor. —D. Portion of branch with infructescence. —E. Stipule. —F. Flower. —G. Dried fruit. H, I, *Notopleura congesta* C. M. Taylor. —H. Portion of branch with infructescence. —I. Flower, partially dissected. A, D, H to 5-cm scale; E, F, G, I to same scale; B, C to same scale. A, C based on *Flynn et al. 4025*; B based on *Miller et al. 2175*; D, G based on *Cerón & Hurtado 3840*; E, F based on *Hurtado 2687*; H based on *Cerón 2291*; I based on *Foster 8586*.

Notopleura aequatoriana C. M. Taylor, sp. nov. TYPE: Ecuador. Napo: cantón Archidona, carretera Hollín–Loreto, entre Avila y Loreto, Huiruna, comunidad Quechua, 00°43′S, 77°19′W, 450 m, 24 Nov. 1989, *C. E. Cerón 7745* (holotype, MO-4247070). Figure 1D–G.

Haec species a congeneris statura humili, foliis sat parvis plerumque abaxialiter pilosulis villosulisve, panicula ramosa aliquam brevi, stipularum vaginis interpetiolaribus late triangularibus ad truncatis atque fructuum rubrorum aurantiacorumve pyrenis dorsiventraliter complanatis crista longitudinali in pagina dorsali et marginibus incrassatis munitis distinguitur.

Terrestrial herbs or subshrubs to 35 cm tall, unbranched; stems pilosulous or villosulous, usually becoming glabrescent with age. *Leaf blades* elliptic to obovate, 8–16 × 3–8 cm, at apex acute, at base cuneate to obtuse, drying papyraceous, adaxially glabrous, abaxially moderately to densely pilosulous or villosulous and apparently paler; secondary veins 7 to 11 pairs, extending to near margins; petioles 1–3 cm long, pilosulous or villosulous becoming glabrescent; stipules with sheath 1–2.5 mm long, truncate to broadly triangular, entire, pilosulous or villosulous becoming glabrescent, with interpetiolar appendage conical, to 1 mm long. *Inflorescences* pseudoaxillary, pilosulous or villosulous, branched, with peduncle 3.5–10 cm long, flowering portion pyramidal to rounded, 1–3 × 1.5–4 cm, with developed secondary axes produced at 1 to 2 nodes, with 3 or sometimes 2 secondary axes produced at basalmost node; bracts triangular, acute, entire, those subtending secondary axes 2–7 mm long, floral bracts 1.2–3 mm long; *flowers* sessile in glomerules of 5 to 15, with hypanthium pilosulous, ca. 0.5 mm long; calyx limb pilosulous, 0.5–2 mm long, 5-lobed for ½–¾ its length, lobes narrowly triangular; corolla slenderly funnelform, externally and internally glabrous, tube ca. 4 mm long, lobes 5, triangular, ca. 1 mm long, abaxially smooth; stamens and stigmas not seen. *Infructescences* similar to inflorescences; *fruits* ellipsoid, 6–8 × 4.5–5.5 mm, red to orange, with stipes to 1.5 mm long; pyrenes 2, dorsiventrally flattened, dorsal surface smooth with 1 low, sharp, central, longitudinal ridge and thickened margins.

Habitat, distribution, and phenology. Central eastern Ecuador, in wet forest at 200–620 m; collected in flower in November, in fruit in February–May and November.

This species is distinguished by its low stature, its relatively small leaves that are usually pilosulous or villosulous on the abaxial surface, its stipules with sheaths broadly triangular to truncate, its branched but rather short panicles, its red to orange fruits, and its pyrenes that are dorsiventrally flattened with a longitudinal ridge on the abaxial surface and thickened margins. The specific epithet refers to the geographic range of this species, which is apparently restricted to Ecuador. The fruits are described as red to orange on all collections studied, but they may ultimately become black as in several other species; such ripe black fruits are rarely collected. *Notopleura aequatoriana* is similar to *N. leucantha* (K. Krause) C. M. Taylor; *N. leucantha* differs in its capitate inflorescences that are subsessile or borne on peduncles up to 1 cm long.

Paratypes. ECUADOR. **Napo:** Parque Nacional Yasuní, pozo petrolero Daimi 2, 00°55′S, 76°11′W, *Cerón & Hurtado 3840* (MO); cantón Archidona, área al sureste del Volcán Sumaco, carretera Hollín–Loreto, Km 65, Huaticocha, 00°45′S, 77°28′W, *Hurtado 2367* (MO); cantón Archidona, Huiruno, al pie del Volcán Sumaco, carretera Hollín–Loreto, 5 km al SO de Loreto, 00°43′S, 77°20′W, *Hurtado 2687* (MO); cantón Orellana, carretera y oleoducto de Maxus en construcción, Km 19, 00°33′S, 76°31′W, *Hurtado 3052* (MO). **Sucumbíos:** cantón Lago Agrio, Dureno, comunidad indígena Cofán, 00°02′S, 76°42′W, *Cerón 217* (MO); along Río Aguarico, 3–5 mi. upstream from Santa Cecilia, *Duke 16062* (MO); Santa Cecilia, near W end of airplane runway, *MacBryde & Dwyer 1287* (MO).

Notopleura aggregata (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria aggregata* Standl., Contr. U.S. Natl. Herb. 18: 128. 1916. TYPE: Panama. Chiriquí: between Alto de las Palmas y Cerro de la Horqueta, 2100–2268 m, 10 Mar. 1911, *H. Pittier 3264* (holotype, US-677655).

Costa Rica to northwestern Colombia, common in Central America but infrequently collected in Colombia.

Notopleura agostinii (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria agostinii* Steyerm., Mem. New York Bot. Gard. 23: 551. 1972. TYPE: Venezuela. Aragua: on Pico Periquito, trail above Pittier monument to summit, Parque Nacional "H. Pittier," 1250–1600 m, 4 Sep. 1960, *J. A. Steyermark & G. Agostini 8* (holotype, NY not seen).

Venezuela.

Notopleura albens C. M. Taylor, sp. nov. TYPE: Ecuador. Carchi: mountains E and NE, along slope of mountain ENE of Rafael Quindí's mountain finca and above Río Verde including top of mountain, 00°52′N, 78°07′W, 1870–2400 m, 3 Dec. 1987, *W. S. Hoover 2260* (holotype, MO-4388879). Figure 2A–D.

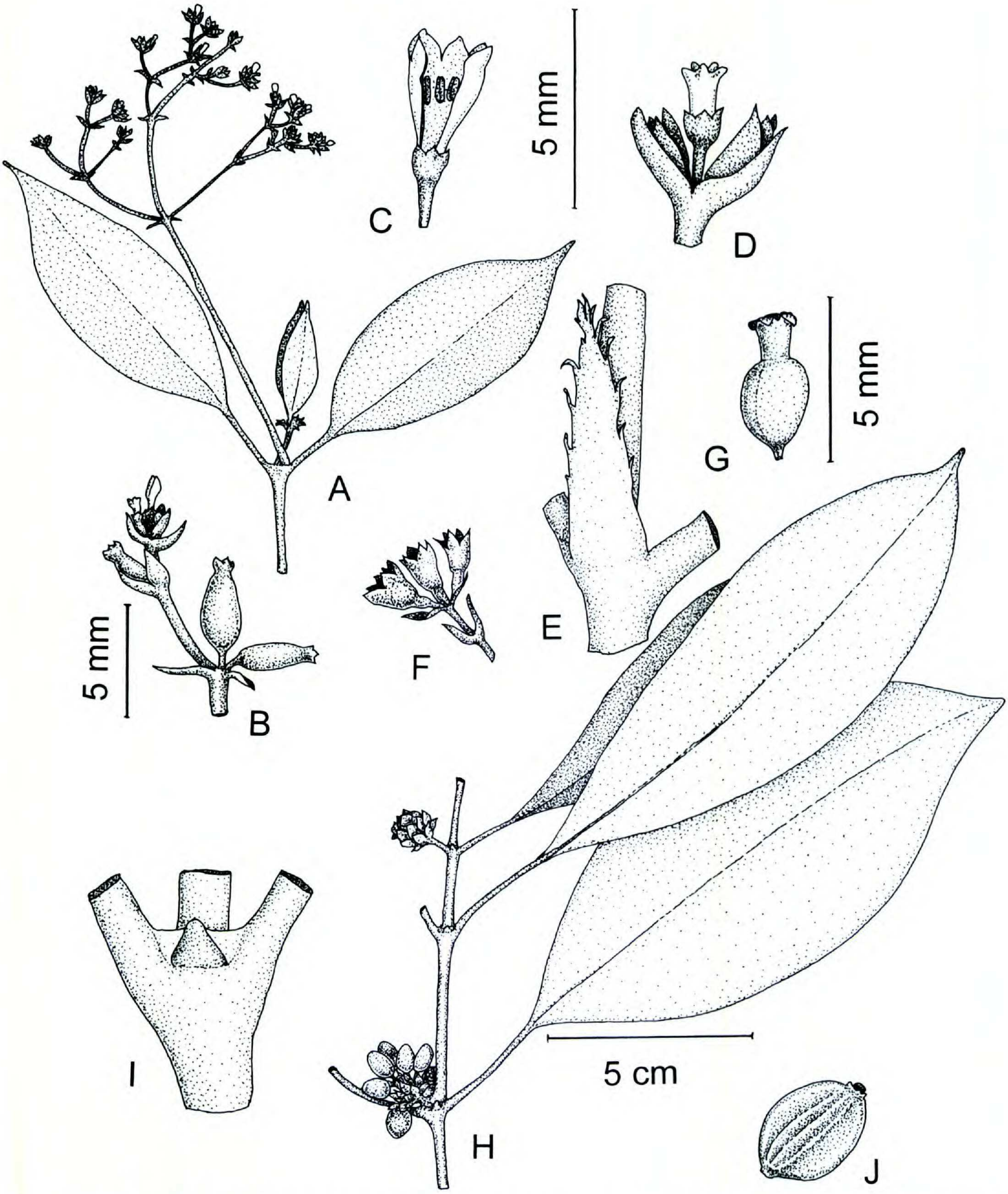

Figure 2. A–D, *Notopleura albens* C. M. Taylor, based on *Hoover 2260.* —A. Branch with inflorescence. —B. Portion of inflorescence with young fruits. —C. Flower, partially dissected. —D. Portion of inflorescence with young flower bud. E–G, *Notopleura callejasii* C. M. Taylor, based on *Callejas et al. 10733.* —E. Stipule. —F. Cymule from inflorescence, with flower after corolla has fallen off. —G. Young fruit. H–J, *Notopleura iridescens* C. M. Taylor, based on *Foster 9231.* —H. Portion of branch with inflorescence and infructescence. —I. Stipule. —J. Dried fruit. A, H to same scale; C, D to same scale; E, F, G, I, J to same scale.

Haec species a congeneris stipularum laminis interpetiolaribus expansis fimbriatis, lamina foliari subtus albente sine nerviis secundariis manifestis, inflorescentiae axibus patentibus valde dichasialibus atque pyrenis sat angustis ca. 4 × 2 mm distinguitur.

Terrestrial herbs to 1 m tall, sometimes creeping, unbranched, with vegetative portions glabrous. *Leaf blades* elliptic, 5.5–11 × 1.8–5.5 cm, at apex acute to slightly acuminate, at base acute to cuneate, drying subcoriaceous to chartaceous, abaxially whitened; secondary veins not evident; petioles 1–3 cm long; stipules with sheath reduced, interpetiolar appendage laminar, triangular to ligulate, 2–4 mm long, caducous, deeply fimbriate. *Inflorescences* pseudoaxillary, glabrous to puberulous, paniculate, with peduncle 5.5–9 cm long, flowering portion pyramidal to rounded, 5–6 × 4–10 cm, with developed secondary axes produced at 2 to 3 nodes, these 2 per node, these and minor axes widely spreading, strongly dichasial; bracts narrowly triangular, acute, entire or ciliolate, those subtending secondary axes 5–7 mm long, floral bracts 2–3 mm long; *flowers* subsessile, with hypanthium glabrous, ca. 1 mm long; calyx limb glabrous, ca. 0.8 mm long, shallowly 5-lobed, lobes broadly triangular; corolla in bud infundibuliform, white, externally and internally glabrous, tube ca. 3 mm long, lobes ca. 1 mm long, triangular, abaxially with conical appendages to 0.3 mm long; stamens inserted just above middle of corolla tube, anthers ca. 0.8 mm long, positioned at mouth of tube; stigmas ca. 0.8 mm long, positioned just below anthers. *Infructescences* similar to inflorescences; *fruits* narrowly ellipsoid to lanceoloid, ca. 4 × 2 mm, mature color unknown; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Northwestern Ecuador, in wet forest at 1350–2400 m; collected in flower in December, in fruit November–January.

This species is distinguished by its stipules with expanded, fimbriate, interpetiolar laminas 2–4 mm long, its leaves whitened on the abaxial surface and with the secondary veins not visible, its inflorescences with the axes strongly dichasial and spreading, and its relatively narrow pyrenes ca. 4 × 2 mm. This species is similar to *Notopleura callejasii* C. M. Taylor; *N. callejasii* differs in its longer calyx limbs, 3–4.5 mm long. The specific epithet refers to the whitened undersides of the leaves.

Paratypes. ECUADOR. **Carchi:** trail from Rafael Quindí's mountain finca above Río Verde, 00°52′N, 78°08′W, *Hoover & Wormley 1794* (MO); above gorge in river draining medium Golondrinas, 00°52′N, 78°17′W, *Hoover 2256* (MO); trail to Pailon encampment, Gualpí Chico area of Awá Reserve, 00°58′N, 78°16′W, *Hoover et al. 3626* (MO).

Notopleura aneurophylla (Standl.) C. M. Taylor, comb. nov. Basionym: *Cephaelis aneurophylla* Standl., Publ. Field Columbian Mus., Bot. Ser. 8: 63. 1930. *Psychotria aneurophylla* (Standl.) Steyerm., Mem. New York Bot. Gard. 23: 546. 1972. TYPE: Venezuela. Aragua: between Maracay and Choroni, 750 m, 12 Dec. 1856, *A. Fendler 1979* (holotype, F).

Venezuela.

Notopleura aneurophylloides (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria aneurophylloides* Steyerm., Mem. New York Bot. Gard. 23: 547. 1972. TYPE: Venezuela. Yaracuy: en la fila, Cerro La Chapa, norte de Nirgua, 1200–1360 m, 11 Mar. 1967, *J. A. Steyermark & G. Bunting 97655* (holotype, VEN not seen).

Venezuela.

Notopleura angustissima (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria macrophylla* var. *angustissima* Standl., Publ. Field Mus. Nat. Hist., Bot. Ser. 22: 203. 1940. TYPE: Panama. Darién: Caná–Cuasi Trail, N slope, 5500 ft., 16 Mar. 1940, *M. E. Terry & R. A. Terry 1597* (holotype, F).

Eastern Panama and presumably adjacent Colombia. This species has been included by recent authors (e.g., Steyermark, 1972) in *Notopleura macrophylla*, but with more material available now *N. angustissima* can be seen to have red fruits and dorsally smooth pyrenes that are hemispherical in cross section, and appears more closely related to *N. siggersiana* (Standl.) C. M. Taylor and several other species with these same fruit characters.

Notopleura anomothyrsa (K. Schum. & Donn. Sm.) C. M. Taylor, comb. nov. Basionym: *Psychotria anomothyrsa* K. Schum. & Donn. Sm., Bot. Gaz. (Crawfordsville) 35: 3. 1903. *Psychotria macrophylla* subsp. *anomothyrsa* (K. Schum. & Donn. Sm.) Steyerm., Mem. New York Bot. Gard. 23: 563. 1972. TYPE: Guatemala. Alta Verapaz: Cubilquitz, 350 m, Dec. 1900, *von Tuerckheim 7909* (holotype, US-943471 not seen, microfiche; isotypes, GH not seen, MO (s.n.), US not seen).

Central Mexico to northern Peru. This name has been included by recent authors (e.g., Steyermark, 1972) in *Notopleura macrophylla*, but closer study shows that this name applies to a distinct species; see the discussion under *N. macrophylla*, below.

Notopleura araguensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria araguensis* Steyerm., Mem. New York Bot. Gard. 23: 551. 1972. TYPE: Venezuela. Aragua: selvas del Río Grande, Parque Nacional, 14 Sep. 1946, *T. Lasser 2047* (holotype, VEN not seen).

Venezuela.

Notopleura callejasii C. M. Taylor, sp. nov. TYPE: Colombia. Antioquia: municipio Valdivia, vereda San Fermín, sítio "Alto de Ventanas" (municipio Yarumal), en la vía que conduce al municipio de Briceño, 2 km NE de la vía Medellín–Valdivia, 7°05′N, 75°32′W, 1900–2100 m, 18 Sep. 1992, *R. Callejas, C. Taylor, F. J. Roldan & A. Gómez 10733* (holotype, HUA-83354). Figure 2E–G.

Haec species a *Notopleura albens* C. M. Taylor limbo calycino 3–4.5 mm longo distinguitur.

Hemiepiphytic, suffrutescent herbs, unbranched, with vegetative portions glabrous. *Leaf blades* elliptic to elliptic-oblong, 8.5–14 × 4–6.5 cm, at apex acuminate, at base cuneate to obtuse, drying chartaceous; secondary veins not or hardly evident; petioles 1–2 cm long; stipules with sheath reduced, interpetiolar appendage laminar, lanceolate to triangular, 12–14 mm long, caducous, deeply fimbriate. *Inflorescences* pseudoaxillary, glabrous to puberulous, paniculate, with peduncle ca. 7 cm long, branched portion pyramidal to rounded, ca. 6 × 11 cm, with developed secondary axes produced at 3 nodes, these 2 per node; bracts narrowly triangular to ligulate, acute to acuminate, entire or ciliolate, those subtending secondary axes 5–17 mm long, floral bracts 1–3 mm long; *flowers* subsessile in cymules of 3(to 5), with hypanthium glabrous, ca. 1 mm long; calyx limb glabrous, 3–4.5 mm long, 5-lobed for ca. ¼ its length, lobes narrowly triangular, acute to acuminate; corolla, stamens, and stigmas not seen. *Infructescences* similar to inflorescences; *fruits* ellipsoid, 4–8 × 4–6 mm, bright red; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Known only from the type collection, in wet montane forest at 1900–2100 m in northwestern Colombia; collected in immature fruit in September.

This species is distinguished by its leaves with the secondary veins not or hardly visible, its stipules with expanded, strongly fimbriate laminar appendages, its inflorescences with spreading axes and well-developed bracts, and its calyx limbs ca. 4.5 mm long. It is similar to *Notopleura albens* of northwestern Ecuador; *N. albens* differs in its calyx limb only about 0.8 mm long. The name honors Ricardo Callejas, professor at the University of Antioquia and a botanist whose work has greatly advanced our knowledge of the flora of the Neotropics, and of Antioquia Department in particular.

Notopleura camponutans (Dwyer & M. V. Hayden) C. M. Taylor, comb. nov. Basionym: *Cephaelis camponutans* Dwyer & M. V. Hayden, Ann. Missouri Bot. Gard. 55: 35. 1968. *Psychotria camponutans* (Dwyer & M. V. Hayden) Hammel, Selbyana 12: 139. 1991. TYPE: Panama. Panamá: Cerro Jefe, *J. D. Dwyer & G. Gauger 7346* (holotype, MO not seen; isotype, F).

Cephaelis gaugeri Dwyer, Ann. Missouri Bot. Gard. 67: 71. 1980. Syn. nov. TYPE: Panama. Panamá: Cerro Jefe, near junction of roads to Cerro Jefe and Altos de Pacora, 18 Dec. 1974, *S. Mori & J. Kallunki 3779* (holotype, MO-224077).

Costa Rica to central Panama.

Notopleura capacifolia (Dwyer) C. M. Taylor, comb. nov. Basionym: *Psychotria capacifolia* Dwyer, Ann. Missouri Bot. Gard. 67: 353. 1980. TYPE: Panama. Bocas del Toro: Bonyik, 500–1200 ft., 13 Apr. 1968, *J. H. Kirkbride, Jr. & J. Duke 601* (holotype, MO-2623364; isotype, MO-2263363).

Psychotria dosbocensis Dwyer, Ann. Missouri Bot. Gard. 67: 370. 1980. Syn. nov. TYPE: Panama. Veraguas: valley of Río Dos Bocas on road between Alto Piedra (above Santa Fe) and Calovébora, 350–400 m, 29 Aug. 1974, *T. B. Croat 27427* (holotype, MO-2216296).

Costa Rica to Peru.

Notopleura chapensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria chapensis* Steyerm., Mem. New York Bot. Gard. 23: 552. 1972. TYPE: Venezuela. Yaracuy: al norte de Nirgua, Cerro La Chapa, 1200–1400 m, 9–10 Nov. 1967, *J. A. Steyermark, G. Bunting & G. Wessels-Boer 100217* (holotype, VEN not seen).

Venezuela.

Notopleura cincinalis C. M. Taylor, sp. nov. TYPE: Peru. Amazonas: provincia Condorcanqui, distrito El Cenepa, región Nororiental del Marañón, Río Cenepa, comunidad Tutino, 04°33'S, 78°10'W, 450 m, 22 Nov. 1993, *R. Vásquez, C. Díaz, J. Mostacero, F. Mejía & J. Ampam 18503* (holotype, MO-5206807). Figure 3A–C.

Haec species a congeneris foliis pubescentia pilosula villosulave tectis, inflorescentia axibus secundariis cincinnalibus praedita pedunculo sat brevi insidente atque fructuum maturitate alborum pyrenis dorsiventraliter complanatis crista longitudinali in pagina dorsali munitis distinguitur.

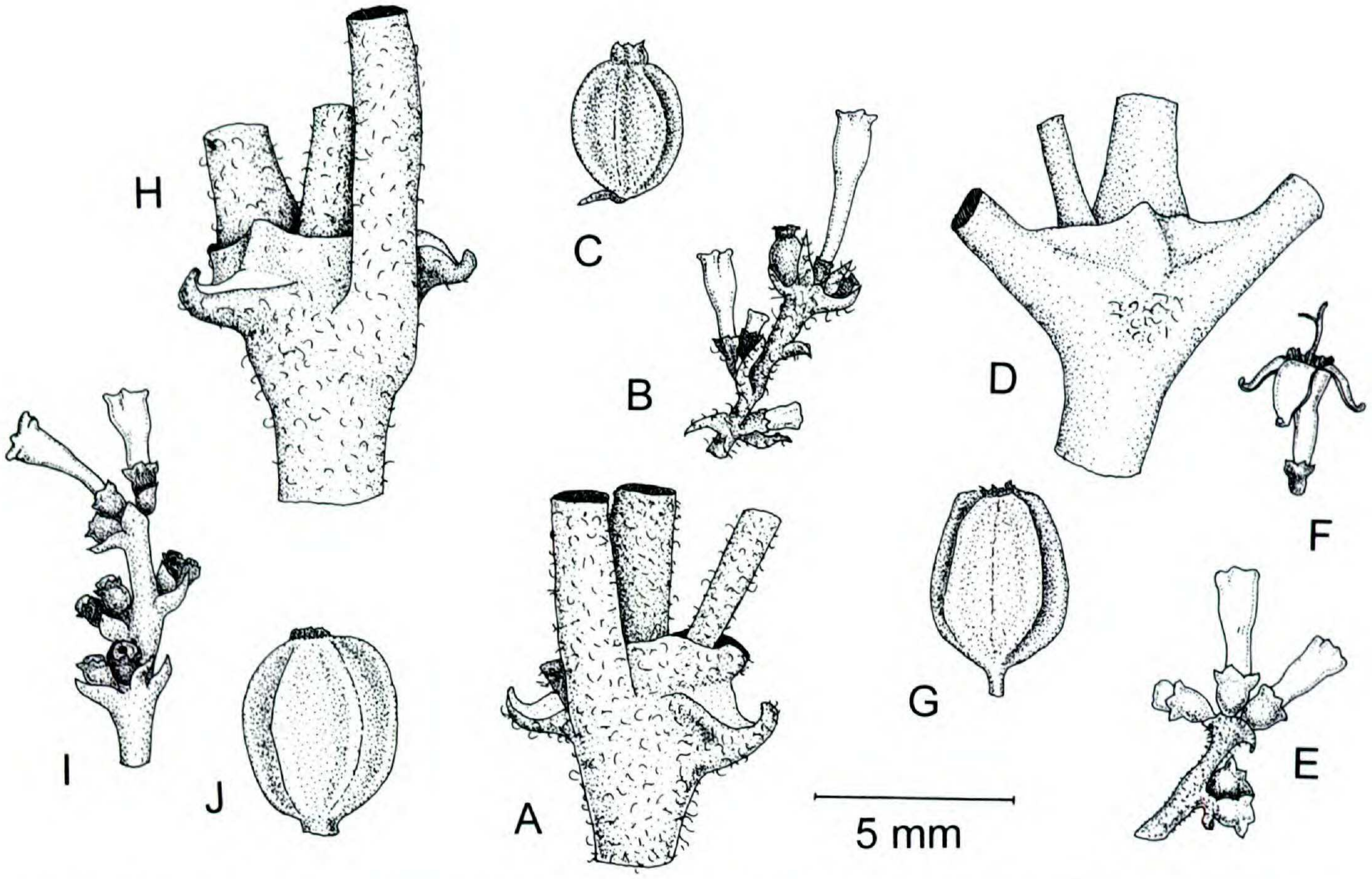

Figure 3. A–C, *Notopleura cincinalis* C. M. Taylor. —A. Portion of stem with stipule. —B. Portion of inflorescence with flower buds and young fruits. —C. Dried fruit. D–G, *Notopleura steyermarkiana* C. M. Taylor. —D. Portion of stem with stipule. —E. Portion of inflorescence with flower buds. —F. Flower. —G Dried fruit. H–J, *Notopleura triaxillaris* C. M. Taylor. —H. Portion of stem with stipule. —I. Portion of inflorescence with flower buds. —J. Dried fruit. All to same scale. A based on *Vásquez et al. 18503*; B based on *Kayap 521*; C based on *Ancuash 64*; D, F based on *Kessler 2589*; E, G based on *Liesner & González 9817*; H, I based on *Foster & Smith 9426*; J based on *Schunke Vigo 10158*.

Terrestrial herbs or shrubs to 1 m tall, apparently unbranched; stems pilosulous or villosulous usually becoming glabrescent. *Leaf blades* elliptic to broadly so, 20–30 × 9–14.5 cm, at apex shortly acuminate, at base cuneate to rounded, drying membranaceous to papyraceous, on both surfaces sparsely to moderately pilose or villosulous but more densely so on principal veins, abaxially apparently paler; secondary veins 13 to 17 pairs, extending to near margins or usually uniting in a distinct submarginal vein especially in distal part of blade; petioles 2.5–7.5 cm long, villosulous or pilosulous, usually becoming glabrescent; stipules with sheath 3–5 mm long, broadly rounded to broadly triangular, entire or ciliolate, pilosulous or villosulous, subcoriaceous, deciduous, with interpetiolar appendage to 5 mm long, conical, fimbriate, glandular, caducous. *Inflorescences* pseudoaxillary, villosulous or pilosulous, paniculate, with peduncle 0.8–5.5 cm long, branched portion pyramidal, 2–6 × 1.5–6.5 cm, with well-developed secondary axes produced at 3 to 4 nodes, these 2 per node, cincinnoid, with flowers or glomerules separated and apparently alternate along them; bracts triangular, acute, entire, those subtending secondary axes 3–8 mm long, floral bracts 1–2 mm long; *flowers* sessile, borne singly or in glomerules of 2 to 3, with hypanthium villosulous or pilosulous, ca. 0.5 mm long, turbinate; calyx limb pilosulous or villosulous, 0.5–0.8 mm long, shallowly 5-lobed, lobes triangular; corolla in bud slenderly infundibuliform, white, externally glabrous except pilosulous or puberulous on lobes, internally glabrous except pilosulous just above middle of tube, tube to 5.5 mm long, lobes to 1 mm long, triangular, a little thickened abaxially near apex; stamens inserted just below mouth of corolla tube, anthers ca. 1 mm long, probably exserted; stigmas ca. 1 mm long, position at anthesis unknown. *Infructescences* similar to inflorescences; *fruits* ellipsoid, 4.5–5 × 4 mm, white; pyrenes 2, dorsiventrally flattened, dorsal surface flat with 1 low, sharp, central, longitudinal ridge and margins thickened.

Habitat, distribution, and phenology. Southern Ecuador to northern Peru, in wet forest at 250–1000 m; collected in flower in March, in fruit in March, July, October, and November.

This species is distinguished by its pilosulous to villosulous leaves, its inflorescences with relatively short peduncles and the secondary axes cincinnoid, its fruits that are white at maturity, and its pyrenes that are dorsiventrally flattened with a longitudinal central ridge on the dorsal surface and thickened margins. The specific epithet refers to the form of the secondary inflorescence axes.

Paratypes. ECUADOR. **Zamora–Chinchipe:** cantón Nangaritza, Río Nangaritza, Pachicutza, camino al hito de Pachicutza, 4°07′S, 78°37′W, *Palacios et al. 8213* (MO). PERU. **Amazonas:** alrededor de la comunidad Kusu, Río Numpatkin, *Ancuash 64* (MO), *Kayap 521* (MO); al lado de Cenepa, *Kayap 1258* (MO).

Notopleura congesta C. M. Taylor, sp. nov. TYPE: Ecuador. Napo: cantón Archidona, faldas al S del volcán Sumaco, carretera Hollín–Loreto, Km 31, comuna Challua Yacu, 00°43′S, 77°36′W, 1200 m, 8–17 Jan. 1989, *A. Alvarado 235* (holotype, MO-3905983). Figure 1H, I.

Haec species a congeneris surculis pubescentia villosula pilosulave tectis, stipulis 0.5–2 mm longis, inflorescentia congesta flores in (1 vel) 3–5 glomerulos et bracteas 2–8 mm longas gerente, lobulis corollinis exappendiculatis atque fructuum maturitate rubrorum aurantiacorumve pyrenis in sectione transversali semicircularibus in pagina dorsali laevibus distinguitur.

Terrestrial herbs or shrubs to 1.8 m tall, apparently unbranched; stems densely villosulous to pilosulous often becoming glabrescent. *Leaf blades* elliptic to obovate, 14–29 × 4–10 cm, at apex acute to acuminate, at base acute to attenuate, drying membranaceous to papyraceous, adaxially glabrous to sparsely puberulous, abaxially pale and moderately to densely villosulous or pilosulous; secondary veins 7 to 9 pairs, extending to near margins; petioles 1–4 cm long, pilosulous or villosulous; stipules with sheath 0.5–2 mm long, truncate to broadly rounded, densely pilosulous or villosulous, generally persistent, without interpetiolar appendage. *Inflorescences* pseudoaxillary, pilosulous or villosulous, capitate to paniculate, nodding, with peduncle 3–4 mm long, flowering portion capitate and hemispherical or branched with 3 to 5 capitula or glomerules, 5–8 × 8–10 mm; bracts triangular, acute, the outermost 4–8 mm long, floral bracts 2–4 mm long; *flowers* sessile, in bud with calyx limb shallowly 5-lobed, 1–1.5 mm long, and corolla lobes 5, abaxially with linear appendages ca. 0.3 mm long. *Infructescences* similar to inflorescences except more expanded, with peduncles to 1.5 cm long, fruiting portion to 1.5 × 5 cm, sometimes becoming branched with 3 to 5 capitula or glomerules; *fruits* ellipsoid to subglobose, 5–6 × 4.5–5 mm, at maturity red to orange; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Central eastern Ecuador to central Peru, in wet forest at 250–1200 m; collected in flower bud in January, October, and December, in fruit in February, October, and December.

This species is distinguished by its villosulous or pilosulous young growth, its truncate unappendaged stipule sheaths 0.5–2 mm long, its congested inflorescences with the flowers borne in one or usually three to five glomerules, its bracts 2–8 mm long, its red to orange fruits, and its pyrenes that are hemispherical in cross section and smooth on the dorsal surface. The specific epithet refers to the glomerulate to capitate inflorescence arrangement. This new species is similar to *Notopleura siggersiana* (Standl.) C. M. Taylor of Central America; *N. siggersiana* differs in its truncate to broadly rounded stipule sheaths 3–5 mm long and its leaves 6–11 cm wide. Vegetatively *N. congesta* is also similar to *N. acuta*; *N. acuta* differs in its always capitate inflorescences, its black fruits borne on stipes to 5 mm long, and its dorsiventrally flattened and longitudinally ridged pyrenes.

Paratypes. ECUADOR. **Napo:** cantón Archidona, faldas al S del volcán Sumaco, carretera Hollín–Loreto, Km 31, comuna Challua Yacu, 00°43′S, 77°36′W, *Alvarado 169* (MO); Payamino, Reserva Florística "El Chuncho", 00°30′S, 77°01′W, *Cerón et al. 2291* (MO); along road between Baeza and Lago Agrio, *Croat 49499* (MO); carretera Hollín–Loreto, Km 40–50, 00°43′S, 77°36′W, *Hurtado 870* (MO); en 2 trochas, la una a 300 m del río Challua y la otra a 400 m W, *Hurtado 1230* (MO). **Sucumbíos:** along Río Aguarico, 3–5 mi. upstream from Santa Cecilia, *Duke 16073* (MO). PERU. **Amazonas:** prov. Bagua, 43 km (by road) NE of Chiriaco, *Barbour 4510* (MO). **Pasco:** prov. Oxapampa, Pichis Valley, Santa Rosa de Chivis, Ríos Nochos, 9 km SW of Puerto Bermúdez on new highway, 10°20′S, 74°58′W, *Foster 8586* (MO).

Notopleura cundinamarcana C. M. Taylor, sp. nov. TYPE: Colombia. Cundinamarca: bosque nuboso de San Miguel, 2700 m, 17 dic. 1959, *L. E. Mora 799* (holotype, COL-94247). Figure 4A–C.

Haec species a *Notopleura siggersiana* (Standl.) C. M. Taylor inflorescentia 1–5 glomerulos capitulave gerente, limbo calycino ca. 1.5 mm longo atque tubo corollino 5–7 mm longo distinguitur.

Terrestrial herbs or shrubs to 2 m tall, apparently unbranched; stems glabrous. *Leaf blades* elliptic to somewhat lanceolate, 15–17 × 5.5–8 cm, at apex acuminate, at base cuneate to attenuate, drying papyraceous to chartaceous, adaxially shortly and

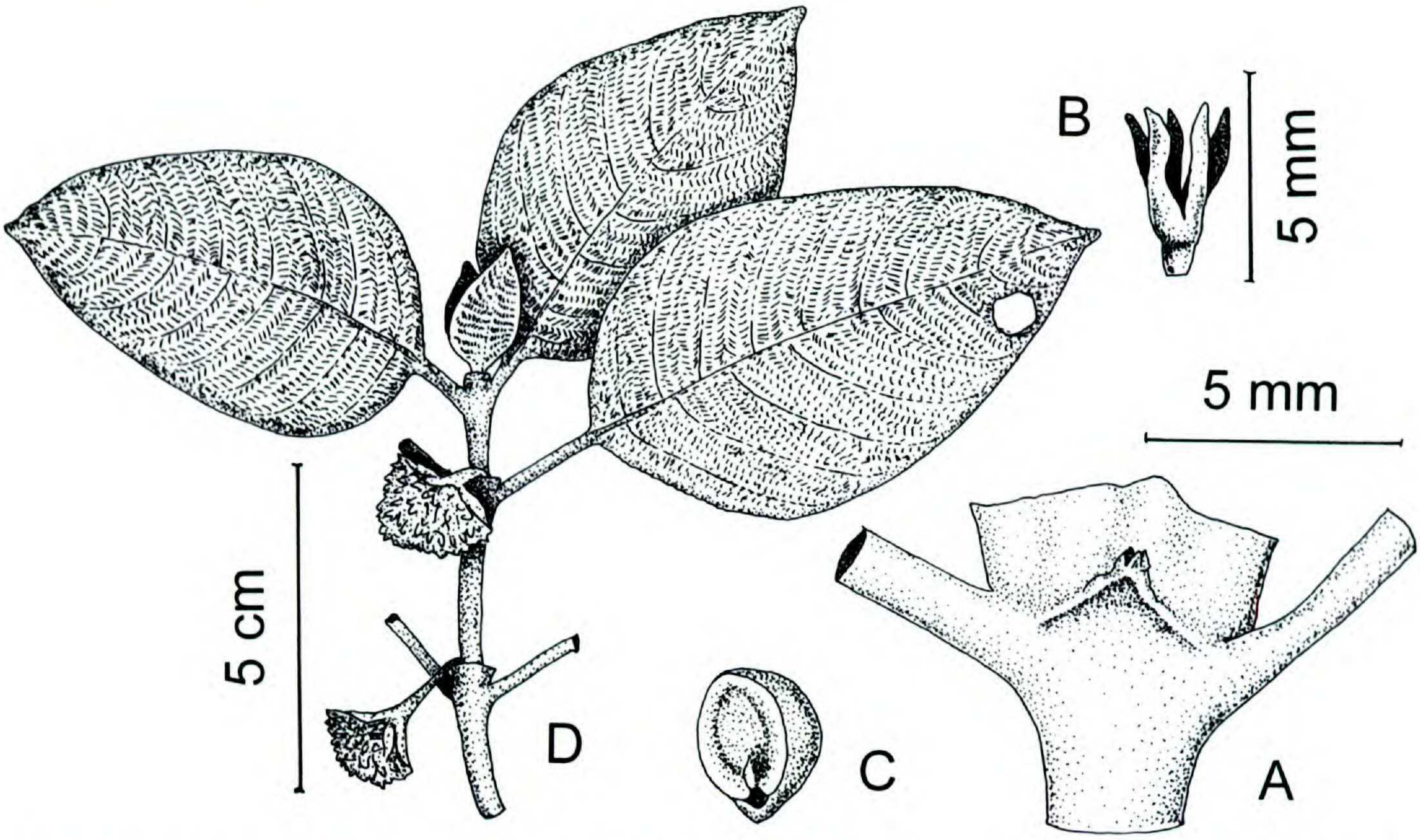

Figure 4. A–C, *Notopleura cundinamarcana* C. M. Taylor, based on *Huertas & Camargo 5168*. —A. Portion of stem with stipule. —B. Calyx. —C. Pyrene, ventral (adaxial) view. —D. *Notopleura lanosa* C. M. Taylor, branch with inflorescence, based on *Silverstone-Sopkin et al. 4968*. A, C to same scale.

stiffly hirsutulous, abaxially hirsutulous to hirsute and usually paler; secondary veins 9 to 12 pairs, usually extending to unite weakly to clearly with margins; petioles 2.5–4 cm long, sparsely hirsutulous to glabrous; stipules with sheath truncate to broadly triangular, 5–7 mm long, membranaceous, entire, glabrous, with interpetiolar appendage 1.5–2 mm long, conical, apparently glandular adaxially and sometimes this glandular portion extending up on sheath immediately distal to appendage. *Inflorescences* pseudoaxillary, glabrous or peduncles hirsutulous, erect to deflexed, capitate to paniculate, with peduncle 1–8.5 cm long, flowering portion pyramidal, 2.5–4.5 × 2.5–6.5 cm, capitate or with 2 to 5 glomerules or capitula, usually with only 1 node, this producing 3 secondary axes, 2 longer and 1 shorter; bracts narrowly triangular to lanceolate or ovate, acute to acuminate, entire or ciliate, those subtending secondary axes 15–25 mm long and united at the base, those in the glomerules or capitula 5–10 mm long; *flowers* sessile, with hypanthium turbinate, ca. 1.5 mm long, glabrous; calyx limb glabrous, 2.5–5 mm long, 5-lobed nearly to base, lobes narrowly triangular, acute; corolla white, slenderly funnelform, glabrous throughout, tube 5–6 mm long, lobes 5, deltoid, ca. 1.5 mm long, abaxially smooth; anthers in apparent short-styled form ca. 1.2 mm long, exserted; stigmas in apparent long-styled form ca. 0.3 mm long, exserted. *Infructescences* similar to inflorescences; *fruit* ellipsoid to subglobose, ca. 5 mm diam., mature color unknown; pyrenes 2, hemispherical, dorsally smooth.

Habitat, distribution, and phenology. In wet montane and cloud forest at 1900–2870 m in Cundinamarca Department of the Cordillera Oriental of Colombia; collected in flower in June and October, in fruit in June and September.

This species is distinguished by its combination of hirsutulous to hirsute leaves and glabrous stems, its stipules with well-developed sheaths with conical interpetiolar appendages, its inflorescences capitate or with 2 to 5 capitula or glomerules, in the latter case with three unequal secondary axes produced at the basal node, its calyx limbs 2.5–5 mm long, its corolla tubes 5–6 mm long, and its hemispherical pyrenes that are smooth dorsally. *Notopleura cundinamarcana* is similar to *N. siggersiana*; *N. siggersiana* differs in its inflorescences with several orders of branching and more numerous, smaller glomerules of flowers, its calyx limbs 0.5–1 mm long, and its corolla tubes ca. 3 mm long. The specific epithet refers to the region where the type was collected.

Paratypes. COLOMBIA. **Cundinamarca:** municipio de Sibate, vereda Paloquemao, *Huertas & Camargo 5168* (COL); Cerro Quininí, *Idrobo 5360* (COL); vereda Agua

Bonita, alrededores de la casa de la Virgen, Alto de San Miguel, *Orozco & Linares 1757* (COL); San Miguel, *Schneider 665* (COL).

Notopleura decurrens (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria decurrens* Steyerm., Mem. New York Bot. Gard. 23: 549. 1972. TYPE: Venezuela. Yaracuy: arriba de San Felipe, Sierra de Aroa, Cerro Negro, en las cabeceras afluentes del Río Cocorotico, 1100–1250 m, 13 Nov. 1967, *J. A. Steyermark & G. Wessels-Boer 100391* (holotype, VEN not seen).

Venezuela.

Notopleura discolor (Griseb.) C. M. Taylor, comb. nov. Basionym: *Psychotria uliginosa* var. *discolor* Griseb., Fl. Brit. W. Ind. Islands 340. 1861. *Psychotria discolor* (Griseb.) Rolfe, Kew Bull. 1893: 258. 1893. SYNTYPES: Jamaica, Dominica, St. Lucia, Trinidad, not cited (K not seen).

Psychotria caribaea Urb., Symb. Ant. 7: 436. 1913. SYNTYPES: Guadeloupe. In Bains-Jaunes (le long du canal de Montèreau), Matouba (coulée de la Ravine-à-Déjeuner), Capesterre (bois de environs du Grand-Etang), in sylvis humidis Grande Découverte, Trois Rivières, 400–900 m, *Duss 2768* (not seen). Dominica. In sylvis prope Laudat, Jan, *Eggers 1012* (not seen); in Morne Baileybook, Mar., *Ramage s.n.* (not seen). Martinique. In Ravine de la Montagne Pelée, Nov., *Hahn 602* (not seen); in montibus Case-Pilote et Case-Navaire, in sylvis Bambou-gouverneur, prope Fontaine Absalon, in Camp de L'Alma, in sylvis Lorrain, *Duss 601* (not seen).

Jamaica and the Lesser Antilles.

Notopleura dukei (Dwyer) C. M. Taylor, comb. nov. Basionym: *Psychotria dukei* Dwyer, Ann. Missouri Bot. Gard. 67: 371. 1980. TYPE: Panama. Darién: Casi-Cana Trail on Cerro Campamiento, E of Tres Bocas, headwaters of Río Coas, 29 Apr. 1968, *J. H. Kirkbride, Jr. & J. A. Duke 1245* (holotype, MO-216265).

Panama. Dwyer's original circumscription of this species included one paratype specimen (*Mori & Kallunki 3750*, cited as "Mori et al.") that actually represents *Notopleura longissima*.

Notopleura fernandezii (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria fernandezii* Steyerm., Mem. New York Bot. Gard. 23: 554. 1972. TYPE: Venezuela. Yaracuy: Pitiguao, camino a Aroa, 1600 m, Jan. 1950, *B. Trujillo & Fernández 766* (holotype, MAR not seen).

Venezuela.

Notopleura hondurensis C. M. Taylor, sp. nov. TYPE: Honduras. Cortés: ca. 30 km above Río de Cusuco, along trail from new park station building to Cerro Cusuco, ca. 23 km W of San Pedro de Sula, ca. 16 km S of Cuyamel, Parque Nacional Cusuco, 15°30'N, 88°13'W, 1640 m, 19 Mar. 1993, *R. Evans 1468* (holotype, MO-4591067). Figure 5A–C.

Haec species a congeneris inflorescentia infructescenciaque pedunculo sat longo insidentibus, vagina stipulari 1.5–2 mm longa atque pyrenis in sectione transversali semicircularibus in pagina dorsali laevibus distinguitur.

Terrestrial herbs or shrubs to 2 m tall, apparently unbranched; stems glabrous. *Leaf blades* elliptic to somewhat ovate, 15–29 × 6.5–15 cm, at apex acuminate, at base obtuse, drying membranaceous, adaxially glabrous, abaxially densely puberulous to pilosulous quickly becoming glabrescent; secondary veins 8 to 12 pairs, generally extending to unite at least weakly with margins; petioles 3–10 cm long, puberulous quickly becoming glabrescent; stipules with sheath 1.5–2 mm long, truncate to broadly rounded, entire, glabrous, membranaceous, sometimes with conical interpetiolar appendage to ca. 1 mm long. *Inflorescences* pseudoaxillary, puberulous to pilosulous, paniculate, with peduncle 8–23 mm long, branched portion pyramidal, 3–11 × 3–16 cm, with developed secondary axes at 2 to 4 nodes, 2 per node; bracts entire, those subtending secondary axes lanceolate to narrowly triangular, 2–6 mm long, acute, floral bracts deltoid to ovate, 1–2 mm long; *flowers* sessile and subsessile in glomerules or congested cymules of 3 to 7, with hypanthium glabrous, ca. 1 mm long; calyx limb glabrous, 0.8–1 mm long, 5-lobed for ca. ½ its length, lobes deltoid; corolla infundibuliform, white, externally and internally glabrous, tube 5.5–7 mm long, lobes 5, 3–3.5 mm long, triangular, abaxially smooth; stamens inserted just above middle of tube, anthers ca. 2 mm long, held at mouth of tube; stigmas ca. 1 mm long, exserted. *Infructescences* similar to inflorescences except usually more expanded, to 22 cm wide; *fruits* ellipsoid, ca. 5 × 5 mm, mature color unknown; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Central Guatemala to Honduras, in wet forest at 1548–1840 m; collected in flower in February, March, and June, in fruit in May.

This species is distinguished by its relatively long peduncles, its stipule sheaths 1.5–2 mm long,

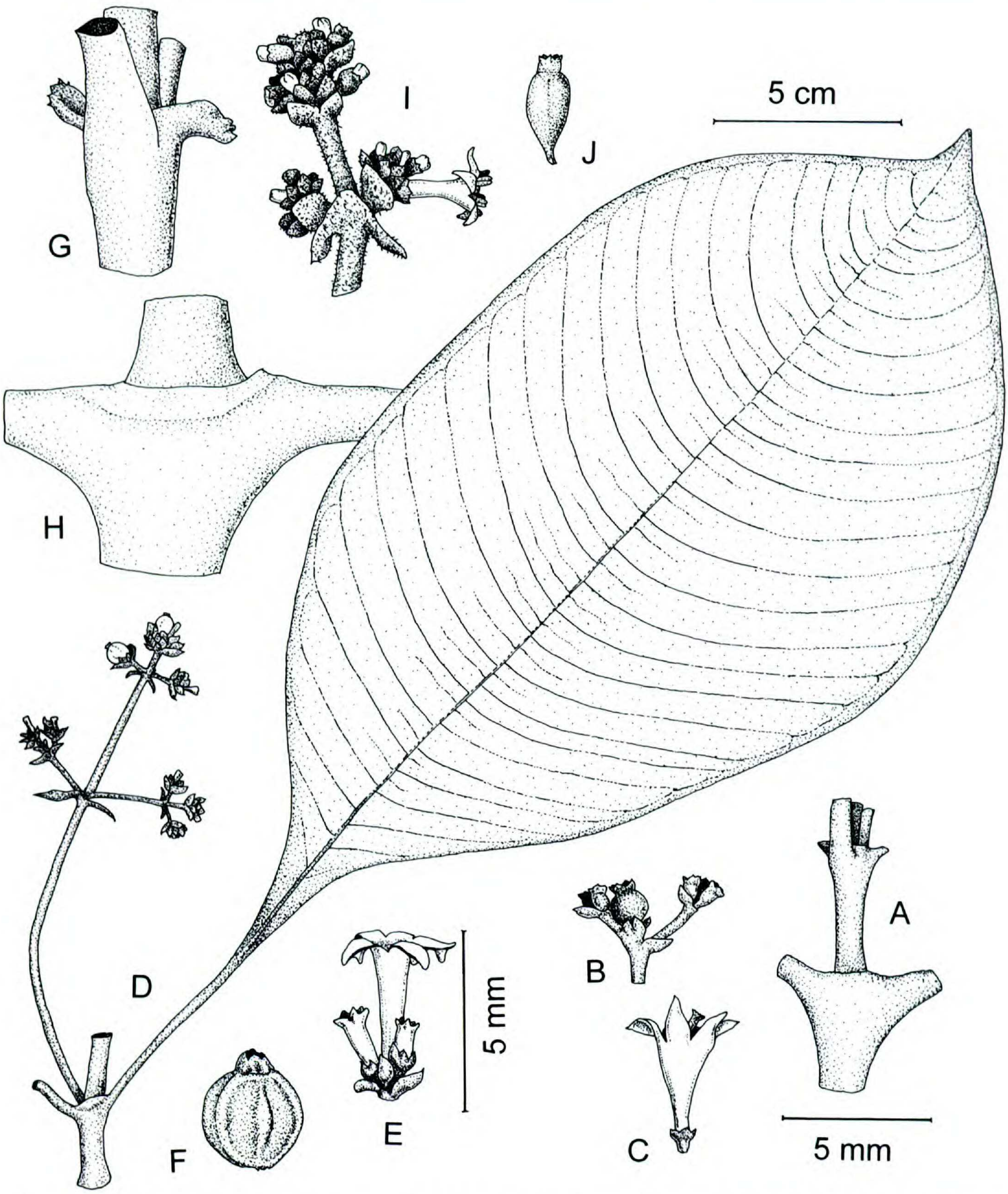

Figure 5. A–C, *Notopleura hondurensis* C. M. Taylor, based on *Evans 1468*. —A. Portion of stem with stipules. —B. Portion of inflorescence with immature fruit. —C. Flower at anthesis. D–F, *Notopleura nepokroeffiae* C. M. Taylor. —D. Portion of branch, showing adaxial leaf surface and inflorescence with young fruits. —E. Portion of inflorescence, with flower buds and flower at anthesis. —F. Dried fruit. D, E based on *Hammel 7413*; F based on *Knapp et al. 2093*. G–J, *Notopleura submarginalis* C. M. Taylor. —G. Stipule from node at stem apex. —H. Portion of stem with stipule fallen, second node down from stem apex. —I. Portion of inflorescence with flower buds and flower at anthesis. —J. Dried fruit. G, H, J based on *Churchill 5775*; I based on *Knapp 4988*. A, B, C, G, H, I, J to same 5-mm scale; E, F to same 5-mm scale.

and its pyrenes that are hemispherical in cross section and smooth on the dorsal surface. This species has been confused previously with *Notopleura macrophylla* and *N. siggersiana*; *N. macrophylla* differs in its pyrenes with 3–5 narrow longitudinal ridges on the dorsal surface, and *N. siggersiana* differs in its stipules with sheaths 3–5 mm long and its pilosulous pubescence on the vegetative parts.

The specific epithet refers to the country where most of the specimens were collected.

Paratypes. GUATEMALA. **Baja Verapaz:** Niño Perdido, Cerro Verde, *Lundell & Contreras 21101* (MO). HONDURAS. **Comayagua:** Cerro Azul Meámbar, on ridge leading to the peak, 10.5 km E of Lago Yojoa, 14°48′N, 87°53′W, *Thomas 618* (EAP, MO). **Copán:** S slopes of Cerro Azul, 12 km NE of Florida, Cerro Azul National Park, 15°06′N, 88°55′W, *Thomas & Mejía 249* (EAP, MO). **Cortés:** a ambos lados del sendero a Cerro Cantiles, 20 km al O de San Pedro Sula, Parque Nacional Cusuco, 15°30′N, 88°14′W, *Mejía 328* (EAP, MO, TEFH). **Yoro:** Río Pijol Valley, 6–7 km S of Nueva Esperanza, 15°12′N, 87°35′W, *Liesner 26571* (MO).

Notopleura humensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria humensis* Steyerm., Mem. New York Bot. Gard. 23: 548. 1972. TYPE: Venezuela. Sucre: entre La Laguna y Roma, NO de Irapa, Cerro de Humo, Peninsula de Paria, 800–1000 m, 5 Mar. 1966, *J. A. Steyermark 95075* (holotype, VEN not seen).

Venezuela.

Notopleura iridescens C. M. Taylor, sp. nov. TYPE: Peru. Huánuco: Pachitea, Codo de Pozuzo, forested alluvial fan floodplain of Río Pozuzo after it emerges from mountains, trail W of settlement to forested lower montane slopes, 9°40′S, 75°28′W, 500–1000 m, 17 Oct. 1982, *R. B. Foster 9231* (holotype, MO-3004162). Fig. 2H–J.

Haec species a *Notopleura plagiantha* (Standl.) C. M. Taylor foliorum nerviis secundariis abaxialiter haud vel vix manifestis, stipulis truncatis tubularibus atque inflorescentia capitata subcapitatave sessili pedunculatave distinguitur.

Terrestrial herbs or shrubs to 0.8 m tall, apparently unbranched; stems glabrous to puberulous. *Leaf blades* elliptic to elliptic-oblong, 10–27 × 4–10 cm, at apex deltoid to acute or a little obtuse, at base cuneate to acute, drying papyraceous, glabrous, abaxially paler; secondary veins not or hardly visible, approximately 10 to 11 pairs; petioles 1–7 cm long, glabrous; stipules with sheath 1–2 mm long, truncate to broadly triangular, entire, glabrous, coriaceous, with thickened midrib sometimes extending to the interpetiolar appendage, this conical, to 1 mm long. *Inflorescences* pseudoaxillary, glabrous, capitate to subcapitate, with peduncle 0–6 mm long, head ovoid to hemispherical, 8–20 mm diam.; outermost bracts lanceolate to ovate, 5–7 mm long, acute, entire, with margins frequently somewhat involute, floral bracts ligulate to oblanceolate, 3–7 mm long, obtuse to rounded; *flowers* sessile, with hypanthium glabrous, ca. 0.5 mm long; calyx limb glabrous, 0.5–0.6 mm long, shallowly 5-lobed, lobes triangular; corolla in bud tubular to somewhat infundibuliform, apparently white, externally glabrous, internally glabrous except for a densely pilosulous ring near middle of tube, tube ca. 5 mm long, lobes 5, ca. 1 mm long, triangular, abaxially smooth; stamens inserted just above middle of tube, anthers ca. 0.8 mm long, held at mouth of tube. *Infructescences* similar to inflorescences or often somewhat more expanded, with peduncle to 5.5 cm long and often becoming thickened distally; *fruits* ellipsoid, 7–8 × 5–6 mm, red, with stipes to 5 mm long; pyrenes 2, dorsiventrally flattened, dorsal surface flat with 1 or 3 low, sharp, longitudinal ridges.

Habitat, distribution, and phenology. Amazonian southern Colombia to northeastern Peru, in wet forest, generally at 115–210 m except to 1400 m in Colombia; collected in flower in January, February, September, and October, in fruit January, May, June–August, and November.

This species is distinguished by its leaves with the secondary veins not or hardly visible on the abaxial leaf surface, its truncate to broadly triangular stipule sheaths, and its pedunculate, capitate to subcapitate inflorescences. It has been confused previously with *Notopleura plagiantha*; *N. plagiantha* differs in its stipules with expanded interpetiolar laminas and its leaves with the secondary veins clearly evident on the abaxial surface. The abaxial leaf surface of *N. iridescens* reportedly has a "silvery-shiny" or "iridescent" surface; the specific epithet refers to this feature.

Paratypes. COLOMBIA. **Putumayo:** municipio Mocoa, corregimiento de San Antonio, vereda Alto Campucana, finca La Mariposa, 1°12′N, 76°38′W, *Betancur et al. 5250* (COL, MO), *Franco et al. 5447* (COL, MO). ECUADOR. **Napo:** behind Hotel Jaguar, 1 hr. down Río Napo by canoe from Misahuallí, *D'Arcy 14028* (MO); cantón Aguarico, Reserva Etnica Huaorani, Maxus Road and pipeline construction project, Kms 60–61, 00°47′S, 76°26′W, *Pitman 255* (MO, QCNE). **Pastaza:** cantón Pastaza, pozo petrolero "Corrientes" de UNOCAL, 01°43′S, 76°49′W, *Gudiño 540* (MO); vía Auca, 115 km al S de Coca, 10 km al S de la frontera Napo-Pastaza, cerca del río Tigüino, carretera de PETRO-CANADA en construcción, 1°15′S, 76°55′W, *Hurtado & Neill 1534* (MO); Río Curaray, costado sur, frente a las lagunas Patoamo, *Neill & Palacios 6810* (MO); Río Curaray, 2 horas río abajo del pueblo Curaray, en la boca del río Namoyacu, 1°24′S, 76°45′W, *Palacios & Neill 610* (MO); cantón Pastaza, pozo petrolero "Ramírez", 20 km al S de la población de Curaray, 1°32′S, 76°51′W, *Zak & Espinoza 5269* (MO). PERU. **Amazonas:** provincia Bagua, distrito Imaza, comunidad de Kampaensa, 4°55′S, 78°19′W, *E. Rodríguez 579* (MO). **Loreto:** provincia Alto Amazonas, Andoas (margen izquierda del Río Pastaza), Campamento OXI, 2°55′S, 76°25′W, *Vásquez & Jaramillo 1920* (MO); provincia Alto Amazonas, Andoas, 2°55′S, 76°25′W, *Vásquez & Jaramillo 4535* (MO); provincia Loreto, carretera Nauta–Iquitos, 4°29′S, 73°35′W, *Vásquez 2225* (MO); provincia Loreto, Nauta, Río Marañón, 4°29′S, 73°35′W, *Vásquez & Jaramillo 3443* (MO); provincia Maynas, Negro Urco, Río Napo, 3°00′S, 73°28′W, *Gentry & Emmons 39575* (MO); provincia Maynas, caserío Alianza, Río Tamshiyacu, 4°05′S, 72°58′W, *Gentry et al. 29336* (MO); provincia Maynas, Explorer's Inn, Río Amazonas ca. 2 km W of Indiana, 3°30′S, 73°03′W, *Gentry et al. 54595, 55971, 61789, 65790* (MO), *Grández et al. 3654* (MO), *Vásquez & Jaramillo 16931* (MO); Santa María de Nanay, Quebrada Yarina, *Vásquez & Jaramillo 12224* (MO). **Oxapampa:** Palcazu, Río Alto Iscozacin, Ozuz, 10°19′S, 75°16′W, *Foster & d'Achille 9959* (MO).

Notopleura lanosa C. M. Taylor, sp. nov. TYPE: Colombia. Chocó: municipio de San José del Palmar, Cerro del Torrá, vertiente oriental, trocha arriba del helipuerto, bosque nublado primario, 1940–2160 m, 1 Sep. 1988, *P. A. Silverstone-Sopkin, N. Paz, R. T. González, J. E. Ramos, L. H. Ramos & A. Henao 4968* (holotype, MO-4993720; isotype, CUVC). Figure 4D.

Haec species a congeneris omnibus partibus pubescentia villosa lanosave tectis, stipulis tubularibus atque inflorescentia capitata subcapitatave pedunculata distinguitur.

Terrestrial herbs to 0.5 m tall, unbranched; stems villous to lanose with trichomes 1–2.5 mm long. *Leaf blades* elliptic to ovate, 7–8.5 × 4–5 cm, at apex acute to slightly acuminate, at base obtuse to truncate, drying papyraceous, abaxially paler, on both surfaces moderately to densely lanose with trichomes 1–2.5 mm long, adaxially trichomes sometimes arranged in groups apparently associated with vein areoles, abaxially trichomes sometimes organized in groups following principal veins; secondary veins 9 to 10 pairs, extending nearly to margin, frequently looping to form a submarginal vein closely set to margin; petioles 1.5–3 cm long, villous to lanose; stipules with sheath 3–4 mm long, persistent, truncate, entire, membranaceous, subhyaline except green and opaque along midrib on each interpetiolar section, villosulous to glabrescent throughout but with pubescence denser on midrib, without interpetiolar appendage. *Inflorescences* pseudoaxillary, moderately to densely villous to lanose, deflexed, capitate to subcapitate, with peduncle 5–12 mm long, head turbinate, 10–14 × 15–20 mm; bracts narrowly triangular to narrowly lanceolate, 3–14 mm long, acute, ciliate; *flowers* sessile, with hypanthium villose to villosulous, ca. 0.3 mm long; calyx limb green, externally villosulous, internally glabrous, 3–4 mm long on an individual flower, 5-lobed for ca. ½ its length, lobes triangular, acute, unequal in length on an individual flower, ciliate to densely ciliate; corollas, stamens, and stigmas not seen. *Infructescences* and *fruits* not seen.

Habitat, distribution, and phenology. Northwestern Colombia, in wet forest at 1940–2400 m; collected in young flower bud in August and September.

This species is distinguished by its villous to lanose pubescence on all the vegetative parts, its truncate unappendaged stipule sheaths, its pedunculate, capitate to subcapitate inflorescences, and its relatively long calyx limbs. The specific epithet refers to the distinctive pubescence, which is unusual in *Notopleura*.

Paratype. COLOMBIA. **Chocó:** municipio de San José del Palmar, Cerro del Torrá, vertiente oriental, entre el helipuerto y la mesa, *Silverstone-Sopkin et al. 4849* (CUVC, MO).

Notopleura lateralis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria lateralis* Steyerm., Brittonia 33: 391. 1981. TYPE: French Guiana. Sommet des Monts Galbao, à 10 km au SO de Saül, 650 m, 9 Mar. 1975, *J. J. de Granville 2360* (holotype, VEN not seen).

French Guiana.

Notopleura lateriflora (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria lateriflora* Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 100. 1930. TYPE: Colombia. Valle: above La Cumbre, Cordillera Occidental, 1800–2200 m, 14–19 May 1922, *E. P. Killip 5591* (holotype, US-1120573l not seen, microfiche).

Western Colombia to Ecuador.

Notopleura latistipula (Standl.) C. M. Taylor, comb. nov. Basionym: *Cephaelis latistipula* Standl., J. Wash. Acad. Sci. 18: 281. 1928. *Psychotria cartagoensis* Nepokroeff, in Burger & Taylor, Fieldiana, Bot. n.s. 33: 239. 1993, nom. nov. TYPE: Costa Rica. Cartago: vicinity of Orosí, 30 Mar. 1924, *P. C. Standley 39695* (holotype, US-1153168).

Costa Rica.

Notopleura leucantha (K. Krause) C. M. Taylor, comb. nov. Basionym: *Uragoga leucantha* K. Krause, Bot. Jahrb. Syst. 40: 345. 1908. *Cephaelis leucantha* (K. Krause) Standley, Field Mus. Nat. Hist., Bot. Ser. 11(5): 190. 1936. *Psychotria ferreyrae* C. M. Taylor, Monogr. Syst. Bot. Missouri Bot. Gard. 45: 1258. 1993. TYPE: Peru. Huánuco: provincia Humalies, inter Monzon et Huallaga, 600–700 m, Sep., *Weberbauer 3668* (holotype, B destroyed photo (F Rockefeller neg. #754) MO).

Colombia to Bolivia.

Notopleura longipedunculata (Dwyer) C. M. Taylor, comb. nov. Basionym: *Psychotria longipedunculata* Dwyer, Ann. Missouri Bot. Gard. 67: 389. 1980, nom. illeg., not *P. longepedunculata* (Gardn.) Muell. Arg., 1881. *Psychotria longipedunculoides* C. M. Taylor, Fieldiana, Bot. n.s. 33: 257. 1993, nom. nov. TYPE: Panama. Veraguas: valley of Río Dos Bocas, 15.6 km NW of Santa Fe, road between Escuela Agrícola Alto Piedra and Calovébora, 450–550 m, 31 Aug. 1974, *T. B. Croat 27621* (holotype, MO-2203532).

Panama to Ecuador.

Notopleura longissima (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria longissima* Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 102. 1930. TYPE: Colombia. Valle: Córdoba, 80–100 m, 6–8 May 1922, *E. P. Killip 5134* (holotype, US-1140557; isotypes, GH not seen, NY not seen).

Panama to western Colombia.

Notopleura macrophylla (Ruiz & Pav.) C. M. Taylor, comb. nov. Basionym: *Psychotria macrophylla* Ruiz & Pav., Fl. peruv. 2: 56, t. 202, fig. a, subfigs. 1–8. 1799. TYPE: Peru. In Peruviae Andium nemoribus versus Pillao ad Iscutunam tractum, *Ruiz & Pavon s.n.* (holotype, presumably MA not seen; isotype, B destroyed photo (Rockefeller neg. # 480) MO).

Psychotria albacostata Rusby, Descr. S. Amer. Pl. 138. 1920. *Psychotria macrophylla* subsp. *albacostata* (Rusby) Steyerm., Mem. New York Bot. Gard. 23: 562. 1972. TYPE: Colombia. Magdalena: Las Nubes, vicinity of Santa Marta, 910–1666 m, 5 Dec. 1898, *H. H. Smith 1806* (holotype, NY not seen; isotype, MO-124226).

Psychotria macrophylla subsp. *anomothyrsa* fo. *tomentella* Steyerm., Mem. New York Bot. Gard. 23: 564. 1972. Syn. nov. TYPE: Ecuador. Esmeraldas: Km 369 on Quito–San Lorenzo railroad, San Lorenzo, 12 July 1964, *C. Játiva & C. Epling 735* (holotype, NY not seen).

Mexico to Bolivia and the Guianas. *Notopleura macrophylla* has been considered one of the most common species of this group and by far the most morphologically variable by previous authors (e.g., Steyermark, 1972). As recently circumscribed, this name has been applied to plants of *Notopleura* with the following combination of characters: well-developed stipule sheaths with conical, succulent, interpetiolar appendages; pseudoaxillary, pedunculate, paniculate inflorescences with the bracts relatively small and not covering the flowers; flowers borne singly or in groups of two to three on dichasial to monochasial axes; calyx limbs 1.5 mm long or shorter; white corollas; and fruits that are usually white with two pyrenes. This group of plants shows notable morphological variation in other features, and a distribution from central Mexico to Bolivia and Venezuela at sea level through high montane forest.

As Steyermark (1972) noted, the original protologue of *Notopleura macrophylla* is problematic in some details. It comprises both a description and a figure, and unfortunately these two elements are inconsistent with each other in details including some that are diagnostic for species of *Notopleura*. One of the inconsistencies is in the form of stipules, which are described as "interfoliaceae, supraxillares, parvae, semiamplexicaules, unidentatae," while they are illustrated as ovate, acute to acuminate, interpetiolar laminas that are half the length of the petioles. The petioles are described as "bipollicans" or ca. 5 cm long, so these stipules are relatively very long for *Psychotria*. The stipule illustrated does not resemble any known species of *Notopleura*, though it is quite similar to the stipules of *P. amplifrons* Standl. (*Psychotria* subg. *Psychotria*), a montane Andean species that has relatively large leaves and paniculate inflorescences that are often displaced to pseudoaxillary in fruit. Another internal conflict in the protologue of *P. macrophylla* is in the length of the inflorescences, which are described as "longitudine petiolorum" (an unusual formulation, which apparently means "equal to" but suggests that possibly a word is missing), while the figure shows the peduncles to be longer than the petioles and the branched portion of the inflorescence to be about four times as long as the petioles. Also, as noted by Steyermark (1972), the fruits of *P. macrophylla* are described as "obscurè violacea," which is problematic because first, this name has always been applied to plants with white or orange fruits, and second, no species of *Notopleura* are yet known with violet fruits (those of *P. amplifrons* are red). Steyermark (1972: 561–563) did not consider this color description important and concluded that perhaps it was based on the color of dried fruits, although no dried specimens of *Notopleura* have so far been seen with fruits of this color, and none were cited by Steyermark. Considering this fruit color problem together with the other internal conflicts, it seems likely that this protologue was based on specimens or observations of more than one species.

With more collections now available from western South America and in particular Peru, the plants included in *Psychotria macrophylla* by previous authors can be seen to comprise several distinct species. The name is applied here to the plants that match the photo of the isotype specimen, which also constitute most of the plants to which Steyermark (1972) applied this name.

The total range of plants previously included in *P. macrophylla* is here separated among the species listed below. The synonyms listed by Steyermark (1972) are here distributed among these various species, except for *P. nicotianifolia* M. Mart. & Gal. (Bull. Acad. Roy. Bruxelles 11: 229. 1844), which has been treated by more recent authors (e.g., Lorence, 1999) as *Hoffmannia nicotianifolia* (M. Mart. & Gal.) L. O. Wms., and *H. striata* Rusby (Descr. N. Sp. S. Amer. Pl. 134. 1920), which belongs to *Notopleura* but the identity of which is not entirely clear. (Many species of *Hoffmannia* have succulent, divergent, interpetiolar stipules that resemble the interpetiolar stipule appendages of species of *Notopleura*, especially on dried specimens.)

- *N. macrophylla*, with relatively large leaves with the tertiary venation usually noticeably well developed, white fruits, and pyrenes that are triangular to somewhat inflated in cross section with one central ridge, is found from northwestern Colombia to Venezuela and Bolivia;
- *N. steyermarkiana*, with leaves and pyrenes generally similar to those of *N. macrophylla* but with red to orange fruits, is found in the Andes in Venezuela, Colombia, and Ecuador;
- *N. anomothyrsa*, with relatively narrow leaves, corolla lobes that are abaxially appendaged, and mature pyrenes that are strongly dorsiventrally flattened and dorsally 3–5-ridged, is found from southern Mexico to northern Peru, and as circumscribed here does not include the plants treated by Steyermark as *N. macrophylla* subsp. *anomothyrsa* because Steyermark misinterpreted this name;
- *N. tolimensis*, with relatively narrow leaves, corolla lobes that are abaxially smooth, and mature pyrenes that are hemispherical in cross section and dorsally with one or three low ridges, is found from central Mexico to central Peru;
- *N. angustissima*, with relatively narrow leaves, red fruits, and pyrenes that are hemispherical in cross section and dorsally smooth, is found in extreme eastern Panama and presumably adjacent Colombia;
- *N. longissima*, with stipules with expanded interpetiolar laminas and calyx limbs 3–4 mm long, is found from Panama to western Colombia;
- *N. longipedunculata*, with stipules with expanded interpetiolar laminas and calyx limbs 1–1.5 mm long, is found from Panama to Ecuador.

Notopleura macropodantha (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria macropodantha* Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 103. 1930. TYPE: Colombia. Santander: Río Suratá valley, above Suratá, 2000–2300 m, 5–6 Jan. 1927, *E. P. Killip & A. C. Smith 16631* (holotype, US-1352355; isotype, NY not seen).

Colombia.

Notopleura marginata (Benth.) Bullock, Kew Bull. 13: 88. 1958. Basionym: *Coffea marginata* Benth., Pl. hartweg. 193. 1845. *Psychotria hartwegii* Benth., Vidensk Meddel. Nat. Foren. Kjoebenhavn 1852: 37. 1852, not *Psychotria marginata* Sw., 1788. *Psychotria hartwegiana* Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 100. 1930, nom. superfl. TYPE: Colombia. Cauca: ascent to Páramo de Guanacas, *Hartweg 1059* (holotype, K).

Colombia to central Ecuador.

Notopleura micayensis (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria micayensis* Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 105. 1930. TYPE: Colombia. Cauca: La Gallera, Micay Valley, 1200–1500 m, 20–30 June 1922, *E. P. Killip 7760* (holotype, US-1140625).

Costa Rica to Peru. The inflorescence bracts enlarge and darken markedly as the fruits develop, so the infructescences are visually striking and quite different in appearance from the inflorescences. Because of this variation, sometimes flowering specimens have not been recognized as the same species as fruiting specimens.

Notopleura microbracteata (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria microbracteata* Steyerm., Brittonia 33: 391. 1981. TYPE: French Guiana. Sommet des Monts Galbao à 10 km au SO de Saül, 650 m, 9 Mar. 1975, *J. J. de Granville 2362* (holotype, VEN not seen; isotypes, CAY not seen, P not seen).

French Guiana.

Notopleura nepokroeffiae C. M. Taylor, sp. nov. TYPE: Panama. Chiriquí: Palo Alto, 4.5 km NE of Boquete, along western branch of Río Palo Alto, 6300 ft., 24 May 1979, *B. Hammel 7413* (holotype, MO-3014780; isotype, MO-3796484). Figure 5D–F.

Haec species a congeneris foliis nerviis submarginalibus bene evolutis praeditis, limbo calycino 1.2–2 mm longo profunde lobulato, lobulis corollinis appendiculatis atque fructuum maturitate alborum pyrenis dorsiventraliter complanatis crista longitudinali in pagina dorsali munitis distinguitur.

Terrestrial herbs or shrubs to 1 m tall, apparently unbranched; stems glabrous. *Leaf blades* elliptic to usually oblanceolate, 17–30 × 7–14.5 cm, at apex acute to usually acuminate, at base cuneate to acute, drying papyraceous, glabrous or when young sometimes abaxially pustulose, abaxially apparently paler; secondary veins 16 to 22 pairs, uniting in a well-developed submarginal vein; petioles 1–5 cm long, glabrous; stipules with sheath 2–3 mm long, truncate, entire, glabrous, subcoriaceous, with interpetiolar appendage 10–16 mm long, oblanceolate, succulent, somewhat flattened and winged, fimbriate, caducous. *Inflorescences* pseudoaxillary, glabrous to puberulous, paniculate, with peduncle 4–8.5 cm long, branched portion pyramidal, 2–6.5 × 3–7 cm, with developed secondary axes at ca. 3 nodes, these 2 per node; bracts triangular to lanceolate, acute to acuminate, entire, those subtending secondary axes 6–11 mm long, floral bracts 2–4 mm long; *flowers* sessile in glomerules of 5 to 11, with hypanthium glabrous, ca. 0.8 mm long, hemispherical; calyx limb glabrous, 1.2–2 mm long, 5-lobed for ½–¾ its length, lobes triangular; corolla tubular-infundibuliform, white, externally glabrous, internally glabrous except for a pilosulous ring just below mouth of tube, tube ca. 7 mm long, lobes 5, ca. 3 mm long, triangular, abaxially with a conical appendage to 1 mm long; stamens inserted at mouth of corolla tube, anthers ca. 1.2 mm long, exserted; stigmas ca. 0.8 mm long, positioned just below mouth of corolla tube. *Infructescences* similar to inflorescences; *fruits* ellipsoid, ca. 7 × 6 mm, white; pyrenes 2, dorsiventrally flattened, dorsal surface flat with 1 low, sharp, central, longitudinal ridge and margins thickened.

Habitat, distribution, and phenology. Northwestern Costa Rica to western Panama, in wet forest at 1300–2450 m; collected in flower in March–June, in fruit in November.

This species is distinguished by its leaves with well-developed submarginal veins, its calyx limbs 1.2–2 mm long and deeply lobed, its corollas with the lobes abaxially appendaged, its white fruits, and its dorsiventrally flattened pyrenes with one dorsal, central, longitudinal ridge. The specific epithet honors Molly Nepokroeff, who has studied *Notopleura*, particularly in Central America. This new species is similar to *N. submarginalis* and *N. capacifolia*; *N. submarginalis* differs in its larger leaves with rounded to obtuse apices, its larger panicles borne on longer peduncles, its calyx limbs 0.8–1.5 mm long that are only shallowly lobed, and its corolla lobes that are smooth abaxially; *N. capacifolia* differs in its flowers borne singly or in glomerules of two to three along cincinnoid inflorescence axes and its subtruncate to shallowly lobed calyx limbs 0.5–0.8 mm long.

Paratypes. COSTA RICA. **Puntarenas:** Monteverde Biological Reserve, 10°18'30"N, 84°48'W, *Kiehn 880316-1/4* (MO). PANAMA. **Chiriquí:** S slopes of Cerro Pate Macho along Río Palo Alto, 8°47'S, 82°22'W, *Knapp et al. 2093* (MO), *Knapp & Schmalzel 4812* (MO); vicinity of Cerro Punta, above Guadalupe, 8°50'N, 82°35'W, *McPherson 9387* (MO); sendero a la laguna, por el camino a Culebra, Bajo Mono, Boquete, *Montenegro & Cuevas 1154* (MO, PMA).

Notopleura palestinae (Standl. ex Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria palestinae* Standl. ex Steyerm., Acta Biol. Venez. 4: 98, fig. 48. 1964. TYPE: Colombia. Chocó: Río San Juan, cercanías de Palestina, 5–50 m, 12–14 Mar. 1944, *J. Cuatrecasas 16931* (holotype, F not seen; isotype, US-2772235 not seen, microfiche).

Panama to western Colombia. Steyermark's original description of the stipules of this species as simply "bilobed" does not agree with the stipules of the specimens studied, which are united into a sheath with a central, succulent, acute or shortly bifid interpetiolar appendage.

Notopleura panamensis (Dwyer) C. M. Taylor, comb. nov. Basionym: *Montamans panamensis* Dwyer, Ann. Missouri Bot. Gard. 67: 286, fig. 62. 1980. TYPE: Panama. Chiriquí: Cerro Horqueta, 5500 ft., 20 July 1968, *J. D. Dwyer & B. Lallathin 8792* (holotype, MO-2163225).

Psychotria xerococcoides Dwyer, Ann. Missouri Bot. Gard. 67: 441. 1980. Syn. nov. TYPE: Panama. Darién: Cerro Tacarcuna massif between summit camp on westernmost ridge and Pico Tacarcuna, 1650–1800 m, 22 July 1976, *A. Gentry, H. León & L. Forero 16924* (holotype, MO-2465400).

Costa Rica to Panama. These names were published simultaneously, but no differences are evident between their type specimens except the leaf blades are somewhat larger on that of *Montamans panamensis*. The name *M. panamensis* is here chosen because it has been the subject of more study and discussion.

Notopleura parasiggersiana C. M. Taylor, sp. nov. TYPE: Peru. Madre de Dios: provincia de Tambopata, comunidad nativa Infierno, entre Hermosa Chica y Laguna Cocacha, 20 Nov. 1988, *C. Díaz & M. Alexiades 3129* (holotype, MO-3707782). Figure 6G–I.

Haec species a congeneris vagina stipulari 0.5–1.5 mm longa, bracteis floralibus 1–2 mm longis, lobulis corollinis breviappendiculatis atque fructuum maturitate rubrorum aurantiacorumve pyrenis in sectione transversali semicircularibus in pagina dorsali laevibus distinguitur.

Terrestrial herbs or subshrubs to 2 m tall, apparently unbranched; stems glabrous. *Leaf blades* elliptic to oblanceolate, 13–30 × 4–10 cm, at apex acute to acuminate, at base acute to attenuate, drying membranaceous, adaxially glabrous, abaxially moderately to densely puberulous becoming glabrescent; secondary veins 7 to 12 pairs, extending nearly to margins; petioles 1–8 cm long, glabrous or usually puberulous becoming glabrescent; stipules with sheath 0.5–1.5 mm long, rounded to broadly triangular, entire, glabrous or puberulous becoming glabrescent, subcoriaceous, with interpetiolar appendage conical, to 2 mm long, caducous. *Inflorescences* pseudoaxillary, puberulous to pilosulous, paniculate, with peduncle 1–5.5 cm long, branched portion pyramidal, 1–4.5 × 1–4.5 cm, with developed secondary axes at 2 to 3 nodes; bracts narrowly triangular to lanceolate, acute, those subtending secondary axes 2–8 mm long, floral bracts 1–2 mm long; *flowers* sessile or subsessile in cymules of 2 to 5, with hypanthium glabrous or puberulous, ca. 1 mm long; calyx limb glabrous or puberulous, 0.8–1 mm long, shallowly 5-lobed, lobes triangular; corolla slenderly infundibuliform, white, externally puberulous to glabrous, internally glabrous, tube ca. 7 mm long, lobes 5, ca. 2 mm long, triangular, abaxially with a conical to linear appendage 0.2–0.6 mm long; stamens inserted in upper part of tube, anthers ca. 1.2 mm long, exserted; stigma ca. 1 mm long, exserted. *Infructescences* similar to inflorescences or sometimes more expanded; *fruits* subglobose, 5–7 mm diam., orange to red; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Amazonian southern Colombia to southeastern Peru, in wet forest at 1–525 m; collected in flower and fruit generally concurrently throughout the year.

This new species is distinguished by its stipule sheaths 0.5–1.5 mm long, its floral bracts 1–2 mm long, its corolla lobes with short abaxial appendages, its orange to red fruits, and its pyrenes that are hemispherical in cross section and smooth on the dorsal surface. It has previously been confused with *Notopleura siggersiana*; *N. siggersiana* differs in its pilosulous or villosulous pubescence on the vegetative structures, its leaves (6)11–17 cm wide, its stipule sheaths 3–5 mm long, and its floral bracts 2–8 mm long. The specific epithet refers to this similarity.

Paratypes. COLOMBIA. **Amazonas:** municipio de Leticia, Parque Nacional Natural Amacayacu, Centro Administrativo Mata-Matá de INDERENA, trocha que conduce de Mata-matá al sector de Amacayacu, 3°47′S, 70°15′W, *Rudas et al. 2879* (COL, MO); Parque Nacional Natural Amacayacu, 3°45′S, 70°15′W, *Vásquez et al. 12658* (MO). PERU. **Loreto:** Prov. Maynas, quebrada de Tahuayo, near Tamashiyaco, *Croat 19578, 19816* (both MO); Río Napo near entrada de Isla Inayuga, *Croat 20545* (MO); 4 km from Mishana, Río Nanay, Estación Biológica Callicebus, 3°55′S, 73°35′W, *Gentry et al. 15805* (MO), *Vásquez et al. 2786* (MO); casería Alianza, Río Tamashiyacu, 4°05′S, 72°58′W, *Gentry et al. 29345* (MO); Mishana, Río Nanay halfway between Iquitos and Santa María de Nanay, 3°50′S, 73°30′W, *Gentry et al. 31732* (MO), *Gentry & Emmons 38781* (MO), *Solomon 3592* (MO); vicinity of Iquitos, *Revilla 3723* (MO); Nauta, carretera Nauta–Iquitos, Km 5, 4°29′S, 73°35′W, *Vásquez & Arevalo 8973* (MO); carretera Iquitos–Nauta, Km 32, *Vásquez & Jaramillo 7850* (MO); Allpahuayo, Km 20 Iquitos–Nauta [road], ca. 35 km SW of Iquitos, 3°50′S, 73°25′W, *Gentry et al. 56019* (MO); 21 km al S de Iquitos, Estación Experimental del Instituto de Investigaciones de la Amazonía Peruana (IIAP), Allpahuayo, 4°10′S, 73°30′W, *Pipoly et al. 12193* (MO), *12261* (MO), *Vásquez & Jaramillo 14073* (MO), *16638* (MO); Quebrada Sucursari, N side tributary of Río Napo, 3°15′S, 72°55′W, *Gentry et al. 42663* (MO), *54457* (MO); región de Amazonas, distrito Las Amazonas, quebrada Sucursari, ExplorNapo Camp, Llachapa, 3°18–20′S, 72°55′W, *Pipoly et al. 13761* (MO), *13935* (MO), *13767* (MO), *14137* (MO), *14503* (MO), *14531* (MO), *Vásquez & Jaramillo 3825* (MO), *Vásquez et al. 16026* (MO), *16096* (MO); Prov. Requena, alrededores de Requena, 5°05′S, 73°50′W, *Vásquez & Jaramillo 4757* (MO); Requena, carretera Requena a Yaquerana, 5°05′S, 73°50′W, *Vásquez 13351* (MO). **Madre de Dios:** Tambopata Nature Reserve, junction of Río La Torre y Río Tambopata, Swamp Trail, 12°50′S, 69°17′W, *Gentry & Jaramillo 57589* (MO); provincia Manu, Manu Park, Cocha Cashu uplands, 11°45′S, 71°00′W, *Núñez 5878* (MO), *6063* (MO); Tambopata Wildlife Reserve, 30 km S of

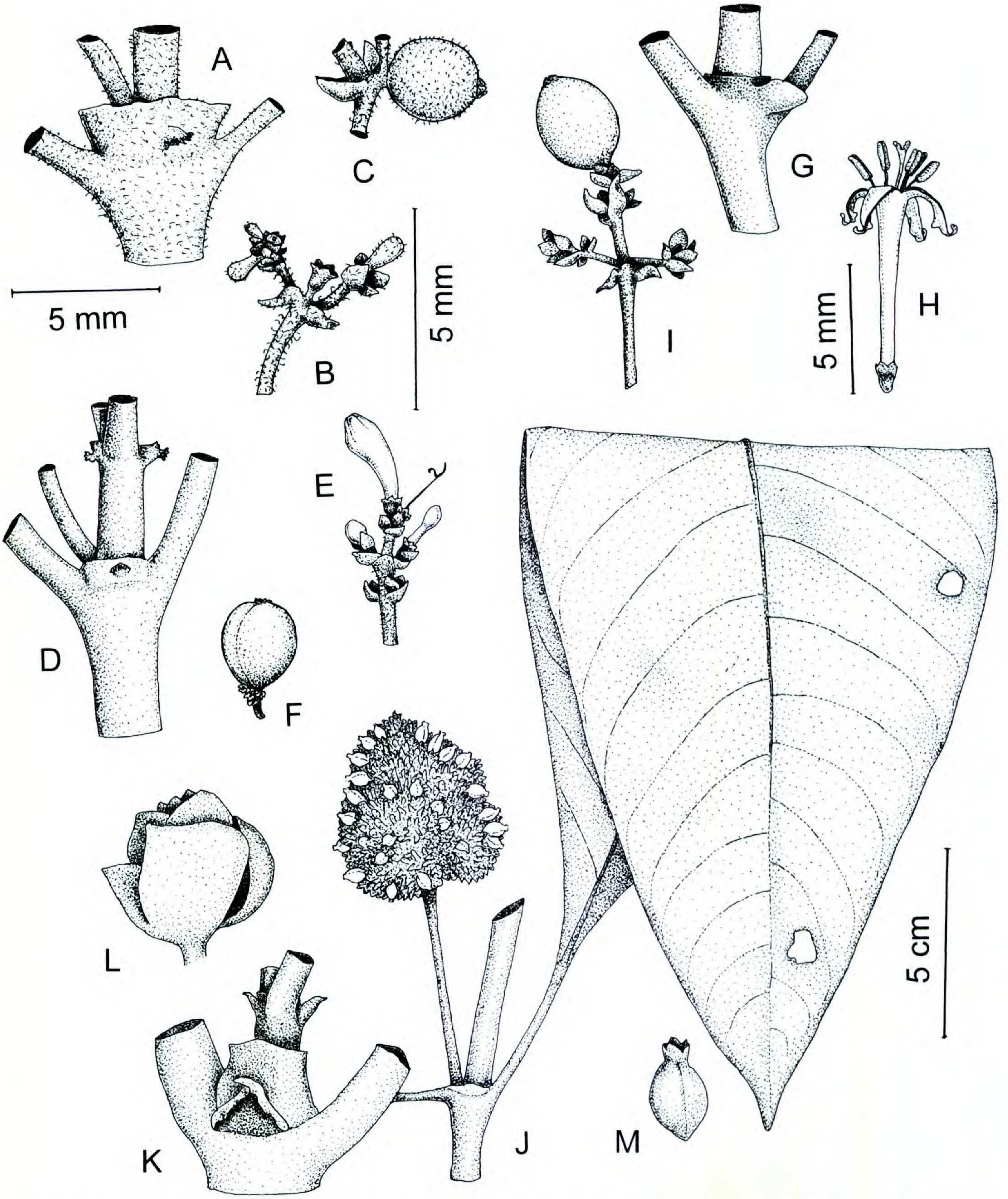

Figure 6. A–C, *Notopleura pilosula* C. M. Taylor. —A. Portion of stem with stipule. —B. Portion of inflorescence with flower buds. —C. Dried fruit. A, B based on *McPherson 12216*; C based on *Hammel et al. 16574*. D–F, *Notopleura scarlatina* C. M. Taylor. —D. Portion of stem with stipules at apex and next proximal node. —E. Portion of inflorescence with flower buds. —F. Dried fruit. D, E based on *Palacios 3062*; F based on *Neill & Cerón 7567*. G–I, *Notopleura parasiggersiana* C. M. Taylor. —G. Portion of stem with stipule. —H. Flower at anthesis. —I. Portion of infructescence with dry fruit. G, H based on *Díaz & Alexiades 3129*; H based on *Knapp 8250*. J–M, *Notopleura pyramidata* C. M. Taylor. —J. Portion of branch with inflorescence. —K. Portion of stem showing stipules at stem apex and next proximal node. —L. Immature inflorescence. —M. Dried fruit. J, M based on *Cogollo et al. 5003*; K, L based on *Fernández A. et al. 9624*. A, D, E, F, G, I, K, L, M to same scale; B, C to same scale.

Puerto Maldonado, 12°15′S, 69°17′W, *Young & Stratton 258* (MO). **Pasco:** provincia Oxapampa, Puerto Laguna, 10°18′S, 75°10′W, *Smith 8405* (MO). **San Martín:** Lamas, Convento, trail to Nuevo Lamas, Km 68 of Tarapoto–Yurimagua road, *Knapp 7950* (MO), *8250* (MO); provincia Mariscal Cáceres, distrito Tocache Nuevo, quebrada de Cascarilla (NE de Puerto Pizana), *Schunke V. 6571* (MO); provincia Mariscal Cáceres, distrito Tocache Nuevo, camino a Santa Rosa (margen derecha del río Mishallo), *Schunke V. 6747* (MO); provincia Mariscal Cáceres, distrito Tocache Nuevo, Cañutillo, NO de la carretera marginal, a 28 km de Tocache, *Schunke V. 7183* (MO); prov. Mariscal Cáceres, distrito Tocache Nuevo, quebrada de Cañuto, cerca a la Chacra de Lizardo Aliaga, *Schunke V. 10935* (MO), cerca a la Chacra del Sr. Victor Arévalo Silva, *Schunke V. 12121* (MO).

Notopleura patria (Standl. & Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria patria* Standley & Steyerm., Fieldiana, Bot. 28: 601. 1953. TYPE: Venezuela. Mérida: Quebrada de Los Saliches, tributary of Río Canaguá, SW of Canaguá, 1950–2135 m, 9 May 1944, *J. A. Steyermark 56411* (holotype, F).

Venezuela.

Steyermark also described one variety of this species, which is provisionally recognized here:

Notopleura patria var. **tovarensis** (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria patria* var. *tovarensis* Steyerm., Mem. New York Bot. Gard. 23: 554. 1972. TYPE: Venezuela. Aragua/Distrito Federal Border: pica hacia Rovar, 1700 m, 1 May 1969, *L. Aristeguieta 7129* (holotype, NY not seen; isotype, VEN not seen).

Venezuela.

Notopleura perparva (Dwyer) C. M. Taylor, comb. nov. Basionym: *Psychotria perparva* Dwyer, Ann. Missouri Bot. Gard. 67: 411. 1980. TYPE: Panama. Darién: Cerro Tacarcuna massif between summit camp on westernmost ridge and Pico Tacarcuna, 1650–1800 m, 22 July 1976, *A. Gentry, H. León & L. Forero 16921* (holotype, MO-2416828; isotype, MO-2416827).

Eastern Panama and presumably in adjacent Colombia. This species is known only from the type, a fruiting specimen collected in a notably poorly known region.

Notopleura pilosula C. M. Taylor, sp. nov. TYPE: Panama/Colombia Border. Darién/Chocó: Parque Nacional del Darién, near gold mine at headwaters of N branch of Río Pocuro, slopes of Cerro Tacarcuna, ca. 6 km N of Cerro Mali, 8°09′N, 77°15′W, 27 Oct. 1987, *B. Hammel, G. de Nevers & H. Herrera 16574* (holotype, MO-3616358). Figure 6A–C.

Haec species a congeneris pubescentia pilosula, stipulis circum caulem in vaginam truncatam connatis, inflorescentia bracteis 1–2 mm longis munita glomerulos 2- vel 3-floros gerente, fructuum maturitate rubrorum pyrenis in sectione transversali semicircularibus in pagina dorsali laevibus distinguitur.

Terrestrial herbs or shrubs to 2 m tall, apparently unbranched; stems pilosulous becoming glabrescent. *Leaf blades* elliptic to rather broadly so, 16–38 × 7–13 cm, at apex acute to usually acuminate, at base acute to cuneate, drying membranaceous to papyraceous, on both surfaces moderately to densely pilosulous; secondary veins 9 to 15 pairs, extending weakly to margins or sometimes looping to interconnect in distal part of blade; petioles 3–7 cm long, pilosulous; stipules with sheath 3–5 mm long, truncate, entire, pilosulous becoming glabrescent, membranaceous, usually deciduous after distalmost 2 to 3 nodes, with interpetiolar appendage conical, 1–2.5 mm long, caducous, apically shortly 2–3-lobed. *Inflorescences* pseudoaxillary, pilosulous, paniculate, with peduncle 1.5–10 cm long, branched portion pyramidal, 3.5–8.5 × 5–8 cm, with developed secondary axes at 2 to 3 nodes, 2 per node; bracts subtending secondary axes triangular to lanceolate, 1–3 mm long, acute, floral bracts suborbicular to ovate, 0.5–1.2 mm long, rounded to obtuse; *flowers* sessile in glomerules of 2 to 3, the glomerules well separated along inflorescence axes; hypanthium glabrous to pilosulous, 0.8–1 mm long; calyx glabrous, limb 0.8–1 mm long, truncate to shallowly 5-lobed, lobes triangular to broadly so; corolla infundibuliform, white, externally densely villosulous or pilosulous becoming glabrescent, internally glabrous, tube ca. 4 mm long, lobes 5, ca. 2.5 mm long, triangular, abaxially smooth; stamens inserted in upper part of tube, anthers ca. 1.2 mm long, exserted; stigmas not seen. *Infructescences* similar to inflorescences or sometimes a little more expanded; *fruits* subglobose to ellipsoid, 4–4.5 × 4–5 mm, red; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Extreme eastern Panama to northwestern Colombia, in wet forest at 600–1600 m; collected in flower in March–

July and October, in fruit in January, April, July, and November.

This species is distinguished by its pilosulous pubescence, its stipules with truncate sheaths and conical, two- to three-lobed, interpetiolar appendages (these are often difficult to discern on herbarium specimens), its inflorescences with floral bracts 0.5–1.2 mm long, its flowers in glomerules of two to three, its red fruits, and its pyrenes that are hemispherical in cross section and smooth on the dorsal surface. The specific epithet refers to the characteristic pubescence found on the vegetative parts of the plant. This new species has been confused with *Notopleura siggersiana*; *N. siggersiana* differs in its lanceolate to ovate bracts 2–6 mm long that completely enclose the flower buds and its inflorescences with a more densely congested arrangement.

Paratypes. PANAMA. **Darién:** Serranía de Pirre, along ascent of Serranía de Pirre above Cana Gold Mine between Río Cana and Río Asucha Ruido, *Croat 37731* (MO), *37823* (MO); middle slopes on W side of Cerro Pirre, *Croat 68927* (MO); Cerro Pirre, ridge top near Rancho Plástico, *Folsom 4267* (MO); Cerro Pirre, valley between Pirre and next most southerly peak, *Folsom 4483* (MO); ridgetop area N of Cerro Pirre, between Cerro Pirre and Rancho Plástico, *Folsom et al. 6338* (MO); Cana-Altos de Nique, trail up ridge between Río Seteganti and Río Alto Tuira (camino a Paleton), SE of goldmine camp and airstrip, *Foster 14130* (MO, PMA); Cuasi–Cana Trail between Cerro Campamento and La Escalera to paramo E of Tres Bocas, *Kirkbride & Duke 1326* (MO); Pirre Massif, Alturas de Nique, above Cana mine, 7°45′N, 77°40′W, *McPherson 12216* (MO). PANAMA/COLOMBIA Border. **Darién/Chocó:** top of Cerro Mali, *Gentry & Mori 13671* (MO); Alto de Nique, southernmost peak of Cerro Pirre Massif, *Gentry et al. 28669* (MO).

Notopleura plagiantha (Standl.) C. M. Taylor, comb. nov. Basionym: *Cephaelis plagiantha* Standl., Field Mus. Nat. Hist., Bot. Ser. 11(5): 190. 1936. *Psychotria plagiantha* (Standl.) C. M. Taylor, Monogr. Syst. Bot. Missouri Bot. Gard. 45: 1258. 1993. TYPE: Peru. Loreto: Florida, Río Putumayo, at mouth of Río Zubineta, 200 m, Mar.–Apr. 1931, *G. Klug 2045* (holotype, F-641376; isotype, MO-1005002).

Panama to Bolivia.

Notopleura polyphlebia (Donn. Sm.) C. M. Taylor, comb. nov. Basionym: *Psychotria polyphlebia* Donn. Sm., Bot. Gaz. 33: 253. 1902. TYPE: Costa Rica. Limón: Suerre, Llanuras de Santa Clara, 300 m, Apr. 1896, *J. D. Smith 6854* (lectotype, selected by Lorence (1999), US-943508; isolectotype, US-943509).

Psychotria bullatifolia Standl., Publ. Field Columbian Mus., Bot. Ser. 8(3): 193. 1930. Syn. nov. TYPE: Peru. Loreto: Pebas, on the Amazon River, 27 July 1929, *Ll. Williams 1803* (holotype, F-604504).

Cephaelis bristanii Dwyer & M. V. Hayden, Ann. Missouri Bot. Gard. 55: 34. 1968. Syn. nov. TYPE: Panama. Darién: Cerro Pirre, *N. Bristan 575* (holotype, MO-1961544).

Nicaragua to Peru.

Notopleura pyramidata C. M. Taylor, sp. nov. TYPE: Colombia. Antioquia: municipio de Urrao, Parque Nacional Natural "Las Orquídeas", Sector Calles, margen izquierda de la Quebrada El Guago y margen derecha del Río Calles, 6°32′N, 76°19′W, 1350–1450 m, 6 July 1991, *A. Cogollo, J. G. Ramírez, C. Builes, M. Villa & O. Alvarez 5003* (holotype, MO-4345872; isotype, JAUM). Figure 6J–M.

Haec species a congeneris inflorescentia pedunculata, capitata, pyramidali cylindrica ovoideave atque pyrenis in sectione transversali semicircularibus in pagina dorsali laevibus distinguitur.

Terrestrial herbs or shrubs to 3 m tall, unbranched; stems puberulous to villosulous sometimes becoming glabrescent. *Leaf blades* elliptic to elliptic-oblong, 15–38.5 × 4–16 cm, at apex acute to somewhat acuminate, at base cuneate to acute, drying membranaceous, adaxially moderately or sparsely puberulous to villosulous, often more densely so along margins, abaxially moderately to densely villosulous, paler; secondary veins 12 to 16 pairs, usually extending to unite with margins; petioles 1–3.5 cm long, puberulous to villosulous; stipules with sheath 4–12 mm long, truncate, entire, glabrous to usually puberulous or villosulous, membranaceous, on each interpetiolar portion with a triangular thickened center region and a conical appendage to 1.5 mm long inserted near base of sheath. *Inflorescences* pseudoaxillary, capitate to subcapitate, with peduncle 1.2–6.5 cm long, head pyramidal to cylindrical or ovoid, 15–25 × 15–22 mm; bracts green, villosulous, the outermost lanceolate to ovate, 5–8 mm long, obtuse to acute, ciliolate to entire, floral bracts narrowly triangular to lanceolate, 4–8 mm long, obtuse to acute; *flowers* sessile or subsessile with pedicel or stipe to 1.5 mm long; hypanthium glabrous, ca. 1 mm long; calyx limb glabrous, with tube ca. 2 mm long, lobes 5, narrowly triangular to linear, ca. 1 mm long, separated by concave sinuses, acute, often ciliate; corolla tubular to a somewhat infundibuliform, greenish white, externally glabrous, internally glabrous except for a pilosulous ring just above middle of tube, tube ca. 6 mm long, lobes 5, ca. 2 mm long, triangular, abaxially smooth; stamens inserted in mouth of tube, anthers ca. 1 mm long, partially exserted; stigmas not seen. *Infructescences* similar to inflorescences or often a little more expanded, to 5 × 4.5 cm; *fruits* ellipsoid, 5–6 × 4–5 mm, orange to red; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Northwestern to central Colombia, in wet forest at 1095–1800 m in the Cordillera Occidental, to 3020 m in the Cordillera Oriental; collected in young flower in July, November, and December, in fruit in January, March–May, and July.

This species is distinguished by its tubular truncate stipule sheaths, its pedunculate, capitate to subcapitate, pyramidal to cylindrical or ovoid inflorescences, and its pyrenes that are hemispherical in cross section and smooth on the dorsal surface. The specific epithet refers to the distinctive inflorescence shape, which is found in several species of *Notopleura* but is particularly striking in *N. pyramidata*.

Paratypes. COLOMBIA. **Antioquia:** municipio de Urrao, zona limotrofe del Parque Nacional Natural "Las Orquídeas", Vereda Calles, margen derecha del río Calles, 6°32′N, 76°19′W, *Cogollo & Ramírez 3126* (JAUM, MO), *17868* (JAUM, MO), margen izquierda del río Calles, *Pipoly et al. 17426* (JAUM, MO); Parque Nacional Natural "Las Orquídeas", Sector Venados arriba, margen izquierda del río Venados, 6°34′N, 76°19′W, *Cogollo et al. 3415* (JAUM, MO); trail from Encarnación to Parque Nacional Natural "Las Orquídeas," western slope of Cordillera Occidental, *Gentry & Rentería 24572* (MO); municipio Frontino, vereda Venados, Parque Nacional Natural "Las Orquídeas", quebrada Las Manzanares, 6°31′N, 76°18′W, *Pipoly et al. 18190* (JAUM, MO), *18237* (JAUM, MO); margen izquierda del río Venado, 6°32′N, 76°19′W, *Pipoly et al. 18165* (JAUM, MO); sitio La Miquera, entre Arenales y río Venados, 6°33′N, 76°19′W, *Pipoly et al. 18298* (JAUM, MO). **Norte de Santander:** municipio de Herrán, Parque Nacional Natural Tama, sector Orocue, hacia el Alto de Pesebre, *Lozano et al. 5521* (COL). **Risaralda:** municipio de Mistrató, corregimiento de Jeguadas, 5°26′N, 76°02′W, *Betancur et al. 3226* (COL, MO); municipio Mistrató, entre los corregimientos de Geguadas y Puerto de Oro, selva de Pisones, *Fernández A. et al. 9624* (COL, HUA).

Notopleura saulensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria saulensis* Steyerm., Brittonia 33: 395. 1981. TYPE: French Guiana. Sommet Monts Galbao à 10 km au SO de Saül, 650 m, 9 Mar. 1975, *J. J. de Granville 2361* (holotype, VEN not seen; isotype, CAY not seen).

French Guiana, perhaps to Bolivia.

Notopleura scarlatina C. M. Taylor, sp. nov. TYPE: Ecuador. Napo: Estación Biológica Jatun Sacha, 01°04′S, 77°37′W, 450 m, 6–14 Oct. 1988, *W. Palacios 3062* (holotype, MO-3678902). Figure 6D–F.

Haec species a congeneris partibus vegetativis glabris puberulisve, vagina stipulari 1–3 mm longa, bracteis floralibus 1–1.2 mm longis, lobulis corollinis appendiculatis atque fructuum maturitate rubrorum aurantiacorumve pyrenis in sectione transversali semicircularibus in pagina dorsali laevibus distinguitur.

Terrestrial herbs or subshrubs to 2 m tall, apparently unbranched; stems glabrous to puberulous. *Leaf blades* elliptic to elliptic-oblong, 20–27 × 8–12.5 cm, at apex shortly acuminate, at base cuneate to attenuate, drying papyraceous, adaxially glabrous, abaxially puberulous to glabrescent; secondary veins 8 to 11 pairs, generally extending to unite with margins; petioles 2–5 cm long, glabrous or puberulous; stipules with sheath 1–3 mm long, truncate to broadly rounded, entire, glabrous to puberulous, subcoriaceous, usually deciduous after distal 1 to 3 nodes, with interpetiolar appendage conical, ca. 1.5 mm long, entire to shortly bifid. *Inflorescences* pseudoaxillary, moderately to densely puberulous, paniculate, with peduncle 2–11 cm long, branched portion pyramidal, 3–11 × 2–12 cm, with developed secondary axes at 3 to 4 nodes, 2 per node; bracts triangular to ovate, acute to obtuse, entire to ciliolate, those subtending secondary axes 2–4 mm long, floral bracts 1–1.2 mm long; *flowers* sessile to subsessile, with hypanthium glabrous to puberulous, ca. 0.8 mm long; calyx limb glabrous to puberulous, 0.2–0.5 mm long, truncate to 5-lobed for ca. ½ its length, lobes deltoid, ciliolate; corolla in bud infundibuliform, white, externally glabrous to puberulous, internally glabrous, tube to 5.5 mm long, lobes 5, to 1.5 mm long, triangular, abaxially smooth; stamens inserted above middle of corolla tube, anthers ca. 1.2 mm long, exserted; stigmas ca. 1 mm long, linear, positioned at mouth of tube. *Infructescences* similar to inflorescences or sometimes more expanded; *fruits* ellipsoid to subglobose, 5–5.5 × 4–5 mm, red to orange; pyrenes 2, hemispherical in cross section, dorsal surface smooth.

Habitat, distribution, and phenology. Known only from the type locality, in wet forest at 400–450 m; collected in flower and fruit generally concurrently, in January, June, and October.

This species is distinguished by its glabrous or puberulous vegetative parts, its stipule sheaths 1–3 mm long, its floral bracts 1–1.2 mm long, its abaxially smooth corolla lobes, its red to orange fruits, and its pyrenes that are hemispherical in cross section and smooth on the dorsal surface. The specific epithet refers to the red color of the mature fruits. This new species has been confused with *Notopleura siggersiana* of Central America; *N. siggersiana* differs in its pilosulous or villosulous pubescence on vegetative parts, its stipules 3–5 mm long, and its flowers borne in congested glomerules and enclosed by bracts 2–8 mm long.

Paratypes. ECUADOR. **Napo:** Estación Biológica Jatun Sacha, 8 km río abajo de Puerto Misahuallí, 1°04'S, 77°37'W, *Cerón & Iguago 5468* (MO), *Hedin 140* (MO), *Miller et al. 2164* (MO), *Neill & Cerón 7567* (MO).

Notopleura siggersiana (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria siggersiana* Standl., J. Wash. Acad. Sci. 15(13): 289. 1925. TYPE: Costa Rica. Limón: vicinity of Guápiles, 300–500 m, Mar. 1924, *P. C. Standley 37210* (holotype, US-1153058).

Psychotria morii Dwyer, Ann. Missouri Bot. Gard. 67: 400. 1980. TYPE: Panama. Veraguas: 11 km from Escuela Agrícola Alto de Piedra, along Río Dos Bocas, Atlantic slope, 15 Nov. 1974, *S. Mori & J. Kallunki 3139* (holotype, MO-2932202).

Mexico to northwestern Colombia.

Notopleura standleyana (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria standleyana* Steyerm., Fieldiana, Bot. 23: 607. 1953. TYPE: Venezuela. Mérida: Montaña de San Jacinto on N side of Río Chama, opposite Mérida, 1675–2195 m, 19 May 1944, *J. A. Steyermark 56681* (holotype, F).

Venezuela.

Notopleura steyermarkiana C. M. Taylor, sp. nov. TYPE: Venezuela. Yaracuay: Sierra de Aroa, Cerro Negro, 8 km SW of San Felipe, 10°17'N, 69°01'W, 1200–1800 m, 1–2 Apr. 1980, *R. Liesner & A. González 9817* (holotype, MO-2877481). Figure 3D–G.

Haec species a *Notopleura macrophylla* fructuum maturitate rubrorum aurantiacorumve pyrenis laevibus in sectione transversali plerumque triangularibus umbonatisve distinguitur.

Terrestrial herbs or shrubs to 3 m tall, unbranched; stems glabrous. *Leaf blades* elliptic to elliptic-oblong, 20–31 × 9–17 cm, at apex acute to usually acuminate, at base cuneate to rounded, drying papyraceous, glabrous or puberulous; secondary veins 15 to 26 pairs, uniting in a submarginal vein at least in distal part of blade; petioles 2.8–15 cm long, glabrous or puberulous; stipules with sheath 3–5 mm long, truncate to rounded or broadly triangular, entire, glabrous, subcoriaceous, deciduous, with interpetiolar appendage conical, to 3 mm long. *Inflorescences* pseudoaxillary, glabrous to densely puberulous, paniculate, with peduncle 2–6.5 cm long, branched portion pyramidal, 3–17 × 5–15 cm, with developed secondary axes at 2 to 4 nodes, these 2 or 3 per node, dichasial usually becoming cincinnoid with age; bracts triangular, acute, entire, those subtending secondary axes 0.5–2 mm long, floral bracts ovate to suborbicular, acute to rounded, 0.5–1.5 mm long, usually paired and fused at base; *flowers* subsessile, borne singly or in glomerules of 2, with hypanthium puberulous, ca. 0.5 mm long, cylindrical to turbinate; calyx limb puberulous, ca. 0.8 mm long, shallowly 5-lobed, lobes triangular; corolla infundibuliform, white or cream, externally puberulous, internally glabrous except villosulous at stamen attachment, tube ca. 3 mm long, lobes 5, ca. 1.5 mm long, narrowly triangular, abaxially smooth; stamens inserted just above middle of tube, anthers ca. 1.2 mm long, positioned at mouth of tube; stigmas ca. 0.8 mm long, exserted. *Infructescences* similar to inflorescences; *fruits* ellipsoid, 6–9 × 5–7 mm, orange to red; pyrenes 2, when young dorsiventrally flattened with dorsal surface smooth, at maturity somewhat inflated, triangular to umbonate in cross section, dorsal surface flat with 1 usually poorly marked longitudinal ridge, margins not thickened.

Habitat, distribution, and phenology. Venezuela to southern Colombia and Ecuador, in wet forest at 1000–2700 m; collected in flower and fruit throughout the year, usually concurrently.

This species is distinguished by its relatively large leaves with the secondary veins usually united into a clearly evident submarginal vein, its stipules with short sheaths and conical interpetiolar appendages, its inflorescences with the flowers subsessile and generally separated on dichasial branches that become cincinnoid with age, its red to orange mature fruits, and its pyrenes that are smooth and at maturity generally triangular to umbonate in cross section. The specific epithet honors Julian Steyermark, who worked extensively on South American Rubiaceae. *Notopleura steyermarkiana* is very similar to *N. macrophylla*; *N. macrophylla* differs in its corollas with slender tubes 5–7 mm long, its white fruits, and its pyrenes with 4 to 5 low, slender, longitudinal ridges on the dorsal surface. Steyermark (1972: 561–565) treated *N. macrophylla* and *N. steyermarkiana* as subspecies of *Psychotria macrophylla*, because he considered the pyrene shape and fruit color that distinguish these taxa to be less important than leaf shape and size, which he used to circumscribe *P. macrophylla*. *Notopleura steyermarkiana* generally corresponds to the plants Steyermark called "*Psychotria macrophylla* subsp. *albacostata* (Rusby) Steyerm.," but the type collection of *P. albacostata* belongs to *N. macrophylla* as circumscribed here.

Paratypes. COLOMBIA. **Nariño:** Reserva Natural La Planada, a 7 km de Chuncunés, 1°10′N, 77°58′W, *de Benavides 8969* (MO). **Putumayo:** municipio Mocoa, corregimiento de San Antonio, vereda Alto Campucana, finca La Mariposa, 1°12′N, 76°38′W, *Fernández A. et al. 10759* (COL, MO). ECUADOR. **El Oro:** hacienda Buenaventura, 12 km W of Piñas on road to Machala, 3°48′S, 79°46′W, *Kessler 2589* (MO), *2637* (MO). **Napo:** Archidona Cantón, carretera Hollín–Loreto, Km 25, Sector Challua Yacu, faldas al S del Volcán Sumaco, 1°45′S, 77°38′W, *Cerón & Hurtado 6492* (MO); Cantón El Chaco, Proyecto Hidroeléctrico Coca, Punto ST3, margen derecha del Río Quijos, ca. 10 km al S de Reventador, 00°11′S, 77°39′W, *Palacios 5938* (MO). VENEZUELA. Without locality, *Fendler 545* (MO). **Aragua:** along road from Maracay to Choroní, near Km 23, ca. 1 km N of summit (Altos de Choroní), 9°21′N, 67°24′W, *Croat 54507* (MO); distrito Girardot, Parque Nacional Henri Pittier (Rancho Grande), La Cumbre de Rancho Grande trail, 10°21′N, 67°39′W, *Davidse et al. 16712* (MO). **Lara:** along road between Humocaro Alto and La Palma, 12.5 km above Humocaro Alto, 9°37′N, 70°04′W, *Croat 60635* (MO). **Trujillo:** distrito de Boconó, Guaramacal, 20 km al E de Boconó, 9°14′N, 70°11′W, *Aymard et al. 5242* (MO); distrito de Boconó, Cerro Guaramacal, camino Mosquey–caserío Guaramacal, vertiente noroeste, 9°10′N, 70°11′W, *Stergios et al. 15812* (MO, PORT). **Yaracuay:** distritos Nirgua y San Felipe, Serranía Santa María-Cerro La Chapa, cumbre, al E de la pica Nirgua-Las Marías, 10°15′N, 68°33′W, *Meier 3246* (MO); distrito de Bolívar, entre Las Parchitas, Tierra Fria y Ojo de Agua, 10°20′N, 68°57′W, *Ortega & Smith 2497* (MO); distrito de Urachiche, al N de Urachiche, a lo largo de la carretera entre Buenos Aires y Guamales, parte occidental de la Sierra de Aroa, 10°14′N, 69°01′W, *Steyermark et al. 114093* (MO, VEN).

Notopleura subimbricata (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria subimbricata* Steyerm., Ann. Missouri Bot. Gard. 74: 400. 1987. TYPE: Venezuela. Miranda: Parque Nacional Guatopo, a lo largo del Río Santa Cruz de Río Grande, lado O de la carretera, al SE de Los Alpes, 10°04′45″N, 66°29′30″W, 400 m, 31 Oct. 1981, *J. A. Steyermark & B. Manara 125483* (holotype, VEN not seen).

Venezuela.

Notopleura submarginalis C. M. Taylor, sp. nov. TYPE: Panama. Chiriquí: ridge 8 km N of Los Planes de Hornito, IRHE Fortuna Hydroelectric Project, 8°45′N, 82°12′W, 1250–1300 m, 9 May 1982, *S. Knapp 4988* (holotype, MO-3041787). Figure 5G–J.

Haec species a congeneris foliis grandibus nerviis submarginalibus bene evolutis praeditis, inflorescentia ad apices axium flores in glomerulis gerente pedunculo bene evoluto insidente, limbo calycino 1–1.5 mm longo atque fructuum alborum pyrenis dorsiventraliter complanatis crista longitudinali in pagina dorsali munitis distinguitur.

Terrestrial shrubs or subshrubs to 4 m tall, apparently unbranched; stems glabrous to puberulous usually becoming glabrescent. *Leaf blades* elliptic to broadly elliptic, 23–32 × 16–24 cm, at apex acute to rounded, at base cuneate to truncate, drying papyraceous, on both surfaces glabrous to puberulous, abaxially apparently paler; secondary veins 20 to 23 pairs, uniting in a well-developed submarginal vein; petioles 2.5–7 cm long, puberulous to glabrous; stipules with sheath 3–5 mm long, truncate to broadly triangular, entire, glabrous to puberulous, subcoriaceous, caducous, with interpetiolar appendage to 6 mm long, conical, stout, shortly fimbriate. *Inflorescences* pseudoaxillary, puberulous to pilosulous, paniculate, with peduncle 7–20 mm long, branched portion pyramidal to broadly so, 6–15 × 5.5–24 cm, with developed secondary axes at 3 to 5 nodes, 2 per node; bracts acute, ciliolate, puberulous to villosulous, those subtending secondary axes triangular to lanceolate, 2–10 mm long, floral bracts ovate, 2–3.5 mm long; *flowers* sessile in glomerules of 5 to 11, with hypanthium glabrous to puberulous, turbinate, ca. 1 mm long; calyx limb glabrous or puberulous, 0.8–1.5 mm long, very shallowly 5-lobed, lobes rounded to broadly triangular; corolla infundibuliform, white to cream, externally glabrous or puberulous, internally glabrous except pilosulous at mouth, tube ca. 5 mm long, lobes 5, ca. 2 mm long, triangular, abaxially smooth; stamens inserted just above mouth of corolla tube, anthers ca. 1.2 mm long, exserted; stigmas not seen. *Infructescences* similar to inflorescences; *fruits* ellipsoid, ca. 7 × 6 mm, white; pyrenes 2, dorsiventrally flattened, dorsal surface flat with 1 low, sharp, central, longitudinal ridge and margins thickened.

Habitat, distribution, and phenology. Western Panama, in wet forest at 1000–1300 m; collected in flower in February–July, in fruit in September.

This species is distinguished by its relatively large leaves with well-developed submarginal veins, its inflorescences with well-developed peduncles and the flowers arranged in glomerules at the ends of the axes, its calyx limbs 0.8–1.5 mm long, its white fruits, and its pyrenes that are dorsiventrally flattened with a central longitudinal ridge on the dorsal surface and thickened margins. The specific epithet refers to the distinctive, well-developed submarginal leaf veins. This new species is similar to *Notopleura capacifolia* and *N. nepokroeffiae*; *N. capacifolia* differs in its inflorescences with the flowers borne singly or in glomerules of two to three along cincinnoid axes and its subtruncate to shallowly lobed calyx limbs only 0.5–0.8 mm long, while *N. nepokroeffiae* differs in its usually smaller leaves that are sharply acuminate at the apex, its inflorescences with smaller panicles borne on shorter peduncles, its calyx limbs 1.2–2 mm long and lobed for ½ or more of their lengths, and its corolla lobes abaxially with well-developed conical appendages.

Paratypes. PANAMA. **Chiriquí:** vicinity of Gulaca ca. 8.5 mi. from Planes de Hornito, La Fortuna on road to dam site, *Antonio 5070* (MO); Fortuna Dam area, along Quebrada Bonito to E of road, 8°45′N, 82°13′W, *Churchill et al. 4732* (MO), *4756* (MO); Fortuna Dam area, Quebrada Bonito to N of reservoir, 8°45′N, 82°13′W, *Churchill 5775* (MO); Fortuna Dam area, between Quebrada Los Chorros and Quebrada Hondo, to N of reservoir, 8°45′N, 82°14′W, *Churchill & Churchill 6178* (MO); along road between Gualaca and Fortuna dam site, 8.3 mi. NW of Los Planes de Hornito, 8°44′N, 82°16′W, *Croat 49967* (MO); along road between Fortuna Lake and Chiriquí Grande, 4.5–5 km N of dam over Fortuna Lake, 8°43′N, 82°17′W, *Croat & Grayum 60042* (MO); ½ km NE of Quebrada de Arena, draining into Río Chiriquí, Carretera del Oleoducto, IRHE Fortuna Hydroelectric Project, 8°46′N, 82°12′W, *Knapp et al. 4052* (MO); forest behind Vivero Forestal, 9 km N of Los Planes de Hornito, IRHE Fortuna Hydroelectric Project, 8°45′N, 82°12′W, *Knapp et al. 4092* (MO); Chiriquí border along Continental Divide on Carretera del Oleoducto ca. 1 km N of Quebrada Arena, IRHE Fortuna Hydroelectric Project, 8°46′N, 82°12′W, *Knapp 5095* (MO); forest behind Vivero Forestal de Boquete, 12 km N of Los Planes de Hornito, IRHE Fortuna Hydroelectric Project, 8°43′N, 82°12′W, *Knapp & Vodicka 5554* (MO); 10 km N of Los Planes de Hornito, IRHE Fortuna Hydroelectric Project, *Knapp & Vodicka 5611* (MO); Continental Divide above Quebrada Arena, Carretera del Oleoducto, IRHE Fortuna Hydroelectric Project, *Knapp & Vodicka 5651* (MO).

Notopleura sucrensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria sucrensis* Steyerm., Mem. New York Bot. Gard. 23: 547. 1972. TYPE: Venezuela. Sucre: laderas que miran hacia La Roma e Irapa, entre la cumbre y La Laguna, NO de Irapa, Cerro de Humo, Peninsula de Paria, 1060–1273 m, 3 Mar. 1966, *J. A. Steyermark 94956* (holotype, VEN not seen).

Venezuela.

Notopleura tapajozensis (Standl.) Bremek., Rec. Trav. Bot. Néerl. 34: 290. 1934. Basionym: *Psychotria tapajozensis* Standl., Publ. Field Columbian Mus., Bot. Ser. 8: 215. 1930. TYPE: Brazil. Pará: San Gabriel, Rio Tapajoz, Jan. 1916, *Kuhlmann 1458* (holotype, B not seen).

Venezuela to northeastern Brazil and Amazonian Colombia. For additional synonymy, see Steyermark (1972).

Notopleura terepaimensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria terepaimensis* Steyerm., Mem. New York Bot. Gard. 23: 565. 1972. TYPE: Venezuela. Lara: Terepaima, 1450 m, 2 Jan. 1954, *B. Trujillo 1955* (holotype, MAR not seen).

Venezuela.

Notopleura thesceloantha (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria thesceloantha* Steyerm., Ann. Missouri Bot. Gard. 75: 347, f. 13. 1988. TYPE: Venezuela. Amazonas: departamento Río Negro, upper Caño Baria, "swampy" area between Río Mawarinuma and headwaters of Río Baria, 00°52′N, 66°15′W, 130 m, 26 Mar. 1984, *R. Liesner 16934* (holotype, MO-3393681).

Colombia to Ecuador and Venezuela.

Notopleura tolimensis (Wernham) C. M. Taylor, comb. nov. Basionym: *Psychotria tolimensis* Wernham, Bull. Misc. Inf. Kew 1914: 68. 1914. TYPE: Colombia. Tolima, Pitalito, Mar. (fl), *Sprague 237* (holotype, K).

Psychotria victoriae Dwyer, Ann. Missouri Bot. Gard. 53: 108. 1966, nom. illeg., not *Ps. victoriae* Standl. (1930). Syn. nov. TYPE: Panama. Chiriquí: Boquete, Collins Finca, Aug. 1964, *Sr. M. V. Hayden 164* (holotype, PMA; isotype, MO-187156A).

Central Mexico to Peru. This species has been included by previous authors in *Psychotria macrophylla*, but with more detailed study of this group of specimens it can be seen to be distinct, as discussed under *P. macrophylla*. The holotype and isotype collections of *P. victoriae* were both mistakenly deposited at MO; the holotype has more recently been sent to PMA, while the isotype remains at MO.

Notopleura tonduzii (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria tonduzii* Standl., J. Wash. Acad. Sci. 15(13): 287. 1925. TYPE: Costa Rica. Cartago: La Estrella, 26–27 Mar. 1924, *P. C. Standley 39461* (holotype, US-1153160).

Nicaragua to Panama. This species has sometimes been confused with *Notopleura aggregata*.

Notopleura triaxillaris C. M. Taylor, sp. nov. TYPE: Peru. Pasco: Oxapampa Province, Palcazu valley, Río San José in the Río Chuchurras drainage, 10°09′S, 75°20′W, 600 m, 12 May 1983, *D. N. Smith 3942* (holotype, MO-3392740). Figure 3H–J.

Haec species a congeneris vagina stipulari truncata rotundatave 2.5–5 mm longa, inflorescentia sat grandi axes secundarios duos vel plerumque tres ad nodum imum pariente atque pyrenis 4–5.5 mm longis dorsiventraliter complanatis crista longitudinali in pagina dorsali munitis distinguitur.

Terrestrial shrubs to 2 m tall, probably unbranched; stems pilosulous or villosulous becoming glabrescent. *Leaf blades* elliptic to elliptic-oblong, 19–32 × 10–15.5 cm, at apex acute to slightly acuminate, at base acute to obtuse or subtruncate, drying membranaceous or papyraceous, on both surfaces glabrous or sparsely to moderately pilosulous or villosulous; secondary veins 12 to 15 pairs, extending to near margins or often looping to form a distinct submarginal vein in distal part of blade; petioles 1.5–5.5 cm long, pilosulous or villosulous becoming glabrescent; stipules with sheath 2.5–5 mm long, truncate to broadly rounded, entire, subcoriaceous, glabrous or villosulous to pilosulous often becoming glabrescent, generally deciduous after distalmost 2 to 3 nodes, with interpetiolar appendage conical, to 3 mm long, entire to bifid, caducous. *Inflorescences* pseudoaxillary, pilosulous or villosulous, paniculate, with peduncle 6–19 cm long, branched portion pyramidal, 5.5–13 × 7–20 cm, with developed secondary axes at 5 to 7 nodes, 2 or usually 3 per node, these subequal or 1 shorter; bracts narrowly triangular, acute, ciliolate, those subtending secondary axes 2–5 mm long, floral bracts 1–2 mm long; *flowers* sessile, separated or in glomerules of 2, usually with arrangement subsecund along inflorescence axes, with hypanthium glabrous or pilosulous, ca. 0.5 mm long; calyx limb glabrous to pilosulous, ca. 1 mm long, subtruncate to shallowly 5-lobed, lobes broadly triangular; corolla tubular-infundibuliform, greenish white or white to cream, externally glabrous, internally glabrous except barbate in throat, tube ca. 4 mm long, lobes 5, ca. 1 mm long, triangular, abaxially smooth or sometimes a little thickened; stamens and stigmas not seen. *Infructescences* similar to inflorescences; *fruits* ellipsoid, 4–5.5 × 4–5 mm, orange; pyrenes 2, dorsiventrally flattened, dorsal surface smooth except with 1 low, sharp, central, longitudinal ridge and margins thickened.

Habitat, distribution, and phenology. Ecuador and Peru, in wet forest at 300–1600 m; collected in flower in February, May, June, and October, in fruit in February, May, and October.

This species is distinguished by its truncate to rounded stipule sheaths 2.5–5 mm long, its relatively large inflorescences with 2 or usually 3 secondary axes produced at the basalmost node, and its dorsiventrally flattened pyrenes 4–5.5 mm long and with 1 central longitudinal ridge on the dorsal surface. The specific epithet refers to its distinctive inflorescence arrangement with 3 secondary axes at the basalmost node; this feature is also found in a few other species of *Notopleura* (e.g., *N. aequatoriana*, *N. cundinamarcana*).

Paratypes. ECUADOR. **Napo:** cantón Archidona, faldas al sur del Volcán Sumaco, carretera Hollín–Loreto, Km 40, Huamaní, 00°43′S, 77°36′W, *Alvarado 23* (MO); carretera Hollín–Loreto, Km 40–50, alrededores de la comunidad Huamaní y del Río Pucuno, 00°43′S, 77°36′W, *Hurtado 869* (MO). PERU. **Amazonas:** provincia de Bagua, distrito de Imaza, Yamayakat, Nororiental del Marañón RENOM, alrededor de la quebrada de Kusu, 4°55′S, 78°19′W, *Quipuscoa 241* (MO). **Huánuco:** hills E of Tingo María, *Croat 21133* (MO); La Divisora, divide between Tingo María and Aguyatia, Cordillera Azul, *Gentry et al. 41436* (MO); provincia de Leoncio Prado, distrito de Rupa Rupa, al E de Tingo María, cerca al Cerro Quemado, *Schunke V. 9947* (MO), *10158* (MO). **Loreto:** provincia de Coronel Portillo, distrito de Padre Abad, la cumbre de la Divisora, *Schunke V. 9856* (MO). **Pasco:** Oxapampa Province, Palcazu valley, Río Cacazu, a few km above confluence with Río Bocaz, near guardpost on road in construction to Puerto Bermúdez, *Foster & Smith 9426* (MO).

Notopleura uberta (Standl. & Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria uberta* Standl. & Steyerm., Fieldiana, Bot. 28: 608. 1953. TYPE: Venezuela. Táchira: near and bordering Quebrada de Palmar, at foot of Páramo de Tamá, 2 km above Bentania and 7 km above Villapaez, 2500 m, 14 July 1944, *J. A. Steyermark 57255* (holotype, F).

Venezuela.

Notopleura uliginosa (Sw.) Bremek., Rec. Trav. Bot. Néerl. 31: 290. 1934. Basionym: *Psychotria uliginosa* Sw., Prodr. 43. 1788. *Uragoga uliginosa* (Sw.) Kuntze, Revis. gen. pl. 2: 963. 1891. TYPE: Jamaica, *Swartz s.n.* (holotype, S not seen).

Mexico and the Antilles to Bolivia and the Guianas. For additional synonymy, see Steyermark (1972: 558).

Notopleura wilburiana (Dwyer) C. M. Taylor, comb. nov. Basionym: *Psychotria wilburiana* Dwyer, Ann. Missouri Bot. Gard. 67: 440. 1980. TYPE: Panama. Veraguas: valley of Río Dos Bocas, 11–13 km beyond Agricultural School at Santa Fe, 350–500 m, 25 July 1974, *T. B. Croat 25745* (holotype, MO-2232437).

Panama to Ecuador. Dwyer originally described the hypanthium as ca. 3 mm long, the calyx teeth as 6, the corolla tube as ca. 3 mm long, and the stipules as "imbricated," but these conditions have not been reconfirmed. The type specimen, which was the only collection cited by Dwyer, has no mature corollas so the corolla tube measurement is questionable, and the only dissection now attached to it is of a young developing fruit. The long hypanthium he described—species of *Notopleura* otherwise have hypanthia 0.5–1.2 mm long—is here interpreted to be a young fruit. All of the flowers seen have only 5 calyx lobes, so the source of that observation is not clear. And, the stipules of this species have interpetiolar laminas that are complanate with respect to each other, though they overlap vertically along the stem so this may be what Dwyer meant by "imbricate."

Notopleura subg. **Viscagoga** (Baill.) C. M. Taylor, comb. nov. Basionym: *Uragoga* sect. *Viscagoga* Baill., Adansonia 12: 227. 1879. *Psychotria* ser. *Viscagoga* (Baill.) Steyerm., Mem. New York Bot. Gard. 23: 566. 1972. TYPE: *Uragoga grosourdieana* Baill. ≡ *Notopleura guadalupensis* (DC.) C. M. Taylor.

Plants succulent to strongly so, epiphytic or sometimes terrestrial growing in saturated soils; stems usually branched, often climbing or clambering. Stipules united around the stem into a truncate, tubular sheath, with interpetiolar appendage conical to reduced or absent. Inflorescences pseudoaxillary or terminal; calyx limb 4- to 5-lobed; corolla 4- to 5(6)-lobed. Fruit red becoming black at maturity; pyrenes 2 to 6, in cross section hemispherical to somewhat dorsiventrally flattened when 2 or triangular when 3 to 6, on the abaxial face smooth or with shallow longitudinal ridges, on the adaxial face smooth or with a central longitudinal ridge.

About 10 species, Mexico and the Antilles to the Guianas, Brazil, and Bolivia, in wet formations from sea level to montane forest.

KEY TO SPECIES OF *NOTOPLEURA* SUBG. *VISCAGOGA*

- 1a. Leaves 12–40 × 3–30 mm, with the secondary veins hardly or usually not at all evident when dry.
  - 2a. Leaves elliptic to oblanceolate, obtuse to rounded at apex; inflorescences sessile to subsessile .... *N. merumensis*
  - 2b. Leaves elliptic to narrowly lanceolate, acute at apex; inflorescences evidently pedunculate.
    - 3a. Leaves elliptic to broadly elliptic or lanceolate, 7–30 mm wide, usually not markedly paler abaxially when dry .... *N. guadalupensis* (p.p.)
    - 3b. Leaves narrowly elliptic, 3–8 mm wide, often markedly paler abaxially at least when dry .... *N. maxonii*
- 1b. Leaves 15 × 10 mm or larger, with the secondary veins usually evident when dry.
  - 4a. Calyx limb with margin truncate to sinuate .... *N. multiramosa*
  - 4b. Calyx limb with margin lobed.
    - 5a. Fully developed fruit with 4 to 6 pyrenes.
      - 6a. Inflorescences pyramidal in profile, with axes well developed and spreading at 90° or wider from each other .... *N. pithecobia*
      - 6b. Inflorescences corymbiform-rounded in profile, with axes well to poorly developed and ascending at less than 90°.
        - 7a. Leaves 2.5–5 × 1.5–2.5 cm; Cuba .... *N. guadalupensis* subsp. *tetrapyrena*
        - 7b. Leaves 4–8 × 2–3.5 cm; Central and South America.
          - 8a. Vegetative branches without a leafless stipule sheath at their bases; calyx limbs ca. 1 mm long, puberulous .... *N. epiphytica*
          - 8b. Vegetative branches without or often with a leafless stipule sheath at their bases; calyx limbs ca. 0.5 mm long, glabrous except ciliolate on margins .... *N. peperomiae*
    - 5b. Fully developed fruit with 2 pyrenes.
      - 9a. Calyx lobes triangular to narrowly so, acute to acuminate, 0.5–1.5 mm long; corolla 6–7 mm long .... *N. crassa*
      - 9b. Calyx lobes broadly triangular and obtuse to deltoid, to 0.8 mm long; corolla 3–5 mm long.
        - 10a. Calyx limb entire and corolla externally smooth .... *N. guadalupensis* (p.p.)
        - 10b. Calyx limb ciliolate or corolla externally papillose-puberulous.
          - 11a. Calyx limb ciliolate and corollas externally smooth .... *N. aligera*
          - 11b. Calyx limb entire and corollas externally papillose-puberulous .... *N. perpapillifera*

Notopleura aligera (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria aligera* Steyerm., Mem. New York Bot. Gard. 23: 572, fig. 75. 1972. TYPE: Venezuela. Bolívar: cumbre of La Escalera, Río Uiri-yuk, Alto Río Cuyuni, 1000 m, 20–21 Aug. 1962, *B. Maguire, J. A. Steyermark & C. K. Maguire 46872* (holotype, NY not seen microfiche; isotype, VEN not seen).

Southeast Venezuela and Guyana.

Notopleura crassa (Benth.) C. M. Taylor, comb. nov. Basionym: *Psychotria crassa* Benth., J. Bot. (Hooker) 3: 227. 1841. TYPE: "British Guiana" [Venezuela]. Amazonas: Maracoaaca [Marawaca], *Schomburgk s.n.* (holotype, K).

Psychotria crassa fo. *alba* Steyerm., Ann. Missouri Bot. Gard. 71: 331. 1984. TYPE: Venezuela. Bolívar: Piar, Macizo de Chimantá, sector centro-NE del Chimantá-tepui, cabeceras orientales del Caño Chimantá, 5°18′N, 62°09′W, 2000 m, 26–29 Jan. 1983, *J. A. Steyermark, O. Huber & Carreño 128062* (holotype, VEN not seen).

Psychotria crassa fo. *angustior* Steyerm., Ann. Missouri Bot. Gard. 71: 331. 1984. TYPE: Venezuela. Bolívar: Piar, Macizo de Chimantá, sector oriental del Chimantá-tepui, cabeceras del afluente derecho superior del Río Tirica ("Caño del Grillo"), 5°18′N, 62°03′W, 2450 m, 7–9 Feb. 1983, *J. A. Steyermark, O. Huber & Carreño 128992* (holotype, VEN not seen).

Venezuela and the Guianas. Steyermark distinguished *Psychotria crassa* fo. *alba* Steyerm. by its "peduncles, axes of the inflorescence, pedicels, calyx and hypanthium, and fruit completely white," and *P. crassa* fo. *angustior* Steyerm. by its "leaf blades narrowly lanceolate or elliptic-lanceolate and 0.5–1.2 cm wide." However, these characters all vary continuously and without correlation to each other, so these forms are not considered taxonomically meaningful here.

Notopleura epiphytica (K. Krause) C. M. Taylor, comb. nov. Basionym: *Psychotria epiphytica* K. Krause, Verh. Bot. Ver. Prov. Brandenburg 50: 108. 1908. TYPE: Peru. Loreto: in der Cerro de Escalero, 1400 m, Mar. 1903, *E. Ule 6692* (holotype, B not seen, photo (F Rockefeller neg. #462) MO).

Psychotria semimetralis K. Krause, Notizbl. Bot. Gart. Berlin-Dahlem 8: 102. 1922. Syn. nov. TYPE: Peru. Loreto: auf den Bergen östlich von Moyobamba zwischen Hartlaubgehölz, 15–1600 m, 1904, *Weberbauer 4751* (holotype, B not seen).

Psychotria orchidearum Standley, J. Wash. Acad. Sci. 18: 276. 1928. Syn. nov. TYPE: Costa Rica. Heredia: Cerros de Zurquí, NE of San Isidro, 2000–2400 m, 3 Mar. 1926, *P. C. Standley & J. Valerio 50863* (holotype, US-1306503).

Psychotria paramorum Standl., Publ. Field Columbian Mus., Bot. Ser. 7(1): 107. 1930. Syn. nov. TYPE: Colombia. Bolívar: below Páramo de Chaquiño, Cordillera Occidental, 2800–3100 m, 24 Feb. 1918, *F. W. Pennell 4342* (holotype, NY not seen, microfiche).

Psychotria lassula Standl., Publ. Field Columbian Mus., Bot. Ser. 7: 100. 1930. Syn. nov. TYPE: Bolivia. La Paz: North Yungas, Polo-Polo, near Coroico, 1100 m, Oct.–Nov. 1912, *O. Buchtien 5767* (holotype, US-1177869).

Nicaragua to Bolivia and infrequent in the Guianas and Venezuela. This species is more broadly circumscribed here than by previous authors. The plants are variable in particular in leaf size and shape, but no clear patterns are apparent in this variation so several names are here synonymized. No material of *Psychotria dudleyi* Steyerm. (Phytologia 31: 227. 1975) has been seen, but Steyermark considered this similar to *P. epiphytica* and *P. semimetralis*, and it is provisionally referred here also.

Notopleura guadalupensis (DC.) C. M. Taylor, comb. nov. Basionym: *Loranthus guadalupensis* DC., Prodr. 4: 294. 1830. *Psychotria guadalupensis* (DC.) Howard, J. Arnold Arbor. 47: 139. 1966. TYPE: Guadeloupe, *Bertero s.n.* (not seen).

Antilles and Mexico to northern South America; *Notopleura guadalupensis* subsp. *guadalupensis* is found in the Lesser Antilles. For additional synonymy, see Steyermark (1972). Steyermark (1972) recognized four subspecies of *N. guadalupensis*, which he distinguished as follows:

"1. Calyx [limb] subtruncate, the minute projections 0.1 mm long or less .... *Psychotria guadalupensis* subsp. *tetrapyrena*
1. Calyx [limb] with manifestly developed lobes 0.2–1.5 mm long.
  2. Calyx [limb] and hypanthium together 1.5–1.6 mm long; calyx [limb] 0.7–0.8 mm long, the lobes 0.2–0.4 mm long; inflorescence 2–3.5 cm long, 2–7 cm wide .... *P. guadalupensis* subsp. *venezuelica*
  2. Calyx [limb] and hypanthium together 2–2.8 mm long; calyx [limb] 1–1.5 mm long, the lobes 0.2–1.5 mm long; inflorescences 1–2 cm long, 1.5–3 cm wide.
    3. Corolla 6–7 mm long .... *P. guadalupensis* subsp. *guadalupensis*
    3. Corolla 2.5–4 mm long .... *P. guadalupensis* subsp. *grosourdyana*"

These four subspecies are provisionally recognized here, though there appears to be greater variation among and on individual plants in calyx limb length and inflorescence size than Steyermark saw.

Notopleura guadalupensis subsp. **grosourdieana** (Baill.) C. M. Taylor, comb. nov. Basionym: *Uragoga grosourdieana* Baill., Adansonia 12: 227. 1879. *Psychotria pendula* subsp. *grosourdieana* (Baill.) Urb., Symb. Ant. 1: 445. 1900. *Psychotria guadalupensis* subsp. *grosourdieana* (Baill.) Steyerm., Mem. New York Bot. Gard. 23: 570. 1972. TYPE: Puerto Rico. Lares, *Grosourdy s.n.* (holotype, P not seen).

Puerto Rico and the Lesser Antilles. This name has been unnecessarily "corrected" by some authors to "*grosourdyana.*"

Notopleura guadalupensis subsp. **tetrapyrena** (Urb.) C. M. Taylor, comb. nov. Basionym: *Psychotria pendula* subsp. *tetrapyrena* Urb., Symb. Ant. 1: 445. 1900. *Psychotria guadalupensis* subsp. *tetrapyrena* (Urb.) Steyerm., Mem. New York Bot. Gard. 23: 570. 1972. TYPE: Cuba. Pinal de Santa Ana, 800 m, *Wright 249* (holotype, B not seen).

Central America and the Antilles.

Notopleura guadalupensis subsp. **venezuelica** (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria guadalupensis* subsp. *venezuelica* Steyerm., Mem. New York Bot. Gard. 23: 570. 1972. TYPE: Venezuela. Aragua: Rancho Grande, Parque Nacional H. Pittier, Nov. 1962, *G. Agostini & M. Fariñas 30* (holotype, VEN not seen).

South America.

Notopleura maxonii (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria maxonii* Standl., Proc. Biol. Soc. Wash. 37: 53. 1924. TYPE: Costa Rica. Cartago: Santa Clara de Cartago, 20 July 1903, *W. R. Maxon & A. D. Harvey 8250* (holotype, US-1180093).

Costa Rica and Panama.

Notopleura merumensis (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria merumensis* Steyerm., Mem. New York Bot. Gard. 23: 574, fig. 76. 1972. TYPE: Guyana. Upper Mazaruni River Basin, trail along SE ridge, Merumé Mountain, Partang River, 1140 m, 4 July 1960, *S. S. Tillett, C. L. Tillett & R. Boyan 43996* (holotype, NY not seen).

Guyana.

Notopleura multiramosa (Steyerm.) C. M. Taylor, comb. nov. Basionym: *Psychotria multiramosa* Steyerm., Mem. New York Bot. Gard. 23: 568. 1972. TYPE: Guyana. Shoulder of E flank, above Thompson Camp, Mt. Ayanganna, 1418–1525 m, 10 Aug. 1960, *S. S. Tillett, C. L. Tillett & R. Boyan 45079* (holotype, NY not seen).

Guyana and southeastern Venezuela.

Notopleura peperomiae (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria peperomiae* Standl., Contr. U.S. Natl. Herb. 18: 132. 1962. TYPE: Panama. Chiriquí: top of Cerro de la Horqueta, 2265 m, 18 Mar. 1911, *H. Pittier 3235* (holotype, US-677632 not seen, microfiche).

Psychotria orchidearum subsp. *persedens* Dwyer, Ann. Missouri Bot. Gard. 67: 47. 1980. Syn. nov. TYPE: Panama. Panamá: Cerro Campana at 2500 ft., 7 Feb. 1969, *E. L. Tyson 5331* (holotype, MO-1973872).

Costa Rica and western Panama. This is the most commonly collected epiphytic *Notopleura* species in southern Central America.

Notopleura perpapillifera (Steyerm.) C. M. Taylor, comb. nov. *Psychotria pendula* subsp. *trinitensis* Urb., Symb. Ant. 1: 447. 1900. Basionym: *Psychotria perpapillifera* Steyerm., Mem. New York Bot. Gard. 23: 571. 1972, not *Psychotria trinitensis* Urb., 1913. TYPE: Trinidad, *Crueger s.n./Bot. Gard. Herb. 3127* (holotype, B not seen).

Trinidad, Tobago, Venezuela, and Guyana.

Notopleura pithecobia (Standl.) C. M. Taylor, comb. nov. Basionym: *Psychotria pithecobia* Standley, Publ. Field Columbian Mus., Bot. Ser. 8(3): 187. 1930. TYPE: Costa Rica. La Palma, 1550 m, 15 Aug. 1898, *A. Tonduz 12432* (holotype, B not seen; isotype, US).

Costa Rica to Ecuador. The name *Psychotria killipii* Standl. (Publ. Field Columbian Mus., Bot. Ser. 7: 99. 1930) may apply to this species, but the material seen is inadequate for conclusive identification of its identity.

Literature Cited

Andersson, L. & J. H. E. Rova. 1999. The *rps*16 intron and the phylogeny of the Rubioideae (Rubiaceae). Pl. Syst. Evol. 214: 161–186.

Bremekamp, C. E. B. 1934. Notes on the Rubiaceae of Surinam. Rec. Trav. Bot. Néerl. 31: 248–308.

Bullock, A. A. 1958. Nomenclatural notes: V. On the typification of the generic name *Notopleura* (Rubiaceae). Kew Bull. 13: 88.

Lorence, D. 1999. A Nomenclator of Mexican and Central American Rubiaceae. Monogr. Syst. Bot. Missouri Bot. Gard. 73: 1–177.

Nepokroeff, M. 1997. Systematics of the Tropical Shrub Genus *Psychotria* L.: Origins, Speciation, and Breeding Systems in Hawaii. Ph.D. Dissertation, University of Wisconsin-Madison.

———, B. Bremer & K. J. Sytsma. 1999. Reorganization of the genus *Psychotria* and tribe Psychotrieae (Rubiaceae) inferred from ITS and *rbc*L sequence data. Syst. Bot. 24: 5–27.

Steyermark, J. A. 1972. *Psychotria*. *In:* B. M. Maguire & Collaborators, Flora of the Guayana Highlands. Mem. New York Bot. Gard. 23: 406–717.

Taylor, C. M. 1996. Overview of the Psychotrieae (Rubiaceae) in the Neotropics. Opera Bot. Belg. 7: 261–270.

Appendix 1. List of Names and Synonyms of *Notopleura*

Accepted names are presented in Bold. Members of subgenus *Viscagoga* are indicated with an asterisk*. Several synonyms listed below are taken from Steyermark (1972) but not treated in detail in this manuscript.

Cephaelis bristanii Dwyer = **N. polyphlebia**
Cephaelis camponutans Dwyer & M. V. Hayden = **N. camponutans**
Cephaelis gaugeri Dwyer = **N. camponutans**
Cephaelis latistipula Standl. = **N. latistipula**
Cephaelis leucantha (Standl.) K. Krause = **N. leucantha**
Cephaelis plagiantha Standl. = **N. plagiantha**
Coffea marginata Benth. = **N. marginata**
Hoffmannia striata Rusby = *Notopleura* sp. (see discussion under *N. macrophylla*)
Loranthus guadalupensis DC. = **N. guadalupensis***
Montamans panamensis Dwyer = **N. panamensis**
Notopleura acuta C. M. Taylor
Notopleura aequatoriana C. M. Taylor
Notopleura aggregata (Standl.) C. M. Taylor
Notopleura agostinii (Steyerm.) C. M. Taylor
Notopleura albens C. M. Taylor
Notopleura aligera (Steyerm.) C. M. Taylor*
Notopleura aneurophylla (Standl.) C. M. Taylor
Notopleura aneurophylloides (Steyerm.) C. M. Taylor
Notopleura angustissima (Standl.) C. M. Taylor
Notopleura anomothyrsa (K. Schum. & Donn. Sm.) C. M. Taylor
Notopleura araguensis (Steyerm.) C. M. Taylor
Notopleura callejasii C. M. Taylor
Notopleura camponutans (Dwyer & M. V. Hayden) C. M. Taylor
Notopleura capacifolia (Dwyer) C. M. Taylor
Notopleura chapensis (Steyerm.) C. M. Taylor
Notopleura cincinalis C. M. Taylor
Notopleura congesta C. M. Taylor
Notopleura crassa (Benth.) C. M. Taylor*
Notopleura cundinamarcana C. M. Taylor
Notopleura decurrens (Steyerm.) C. M. Taylor
Notopleura discolor (Griseb.) C. M. Taylor
Notopleura dukei (Dwyer) C. M. Taylor
Notopleura epiphytica (K. Krause) C. M. Taylor*
Notopleura fernandezii (Steyerm.) C. M. Taylor
Notopleura guadalupensis (DC.) C. M. Taylor*
Notopleura guadalupensis subsp. **grosourdieana** (Baill.) C. M. Taylor*
Notopleura guadalupensis subsp. **tetrapyrena** (Urb.) C. M. Taylor*
Notopleura guadalupensis subsp. **venezuelica** (Steyerm.) C. M. Taylor*
Notopleura hondurensis C. M. Taylor
Notopleura humensis (Steyerm.) C. M. Taylor
Notopleura iridescens C. M. Taylor
Notopleura lanosa C. M. Taylor
Notopleura lateralis (Steyerm.) C. M. Taylor
Notopleura lateriflora (Standl.) C. M. Taylor
Notopleura latistipula (Dwyer) C. M. Taylor
Notopleura leucantha (K. Krause) C. M. Taylor
Notopleura longipedunculata (Dwyer) C. M. Taylor
Notopleura longissima (Standl.) C. M. Taylor
Notopleura macrophylla (Ruiz & Pav.) C. M. Taylor
Notopleura macropodantha (Standl.) C. M. Taylor
Notopleura marginata (Benth.) Bullock
Notopleura maxonii (Standl.) C. M. Taylor*
Notopleura merumensis (Steyerm.) C. M. Taylor*
Notopleura micayensis (Standl.) C. M. Taylor
Notopleura microbracteata (Steyerm.) C. M. Taylor
Notopleura multiramosa (Steyerm.) C. M. Taylor*
Notopleura nepokroeffiae C. M. Taylor
Notopleura palestinae (Standl. ex Steyerm.) C. M. Taylor
Notopleura panamensis (Dwyer) C. M. Taylor
Notopleura parasiggersiana C. M. Taylor
Notopleura patria (Standl. & Steyerm.) C. M. Taylor
Notopleura patria var. **tovarensis** (Steyerm.) C. M. Taylor
Notopleura peperomiae (Standl.) C. M. Taylor*
Notopleura perpapillifera (Steyerm.) C. M. Taylor*
Notopleura perparva (Dwyer) C. M. Taylor
Notopleura pilosula C. M. Taylor
Notopleura pithecobia (Standl.) C. M. Taylor*
Notopleura plagiantha (Standl.) C. M. Taylor
Notopleura polyphlebia (Donn. Sm.) C. M. Taylor
Notopleura pyramidata C. M. Taylor
Notopleura saulensis (Steyerm.) C. M. Taylor
Notopleura scarlatina C. M. Taylor
Notopleura siggersiana (Standl.) C. M. Taylor
Notopleura standleyana (Steyerm.) C. M. Taylor
Notopleura steyermarkiana C. M. Taylor
Notopleura subimbricata (Steyerm.) C. M. Taylor
Notopleura submarginalis C. M. Taylor
Notopleura sucrensis (Steyerm.) C. M. Taylor
Notopleura tapajozensis (Standl.) Bremek.
Notopleura terepaimensis (Steyerm.) C. M. Taylor
Notopleura thesceloantha (Steyerm.) C. M. Taylor
Notopleura tolimensis (Wernham) C. M. Taylor
Notopleura tonduzii (Standl.) C. M. Taylor
Notopleura triaxillaris C. M. Taylor
Notopleura uberta (Standl. & Steyerm.) C. M. Taylor
Notopleura uliginosa (Sw.) Bremek.
Notopleura wilburiana (Dwyer) C. M. Taylor
Psychotria aggregata Standl. = **N. aggregata**
Psychotria agostinii Steyerm. = **N. agostinii**
Psychotria albacostata Rusby = **N. macrophylla**
Psychotria aligera Steyerm. = **N. aligera***
Psychotria amplinoda Steyerm. = **N. tapajozensis**
Psychotria amplinoda var. *ayangannae* Steyerm. = **N. tapajozensis**
Psychotria aneurophylla (Standl.) Steyerm. = **N. aneurophylla**

Psychotria aneurophylloides Steyerm. = **N. aneurophylloides**
Psychotria anomothyrsa K. Schum. & Donn. Sm. = **N. anomothyrsa**
Psychotria araguensis Steyerm. = **N. araguensis**
Psychotria bullatifolia Standl. = **N. polyphlebia**
Psychotria camponutans (Dwyer & M. V. Hayden) Hammel = **N. camponutans**
Psychotria capacifolia Dwyer = **N. capacifolia**
Psychotria caribaea Urb. = **N. discolor**
Psychotria cartagoensis Nepokroeff = **N. latistipula**
Psychotria chapensis Steyerm. = **N. chapensis**
Psychotria crassa Benth. = **N. crassa***
Psychotria crassa fo. *alba* Steyerm. = **N. crassa***
Psychotria crassa fo. *angustior* Steyerm. = **N. crassa***
Psychotria decurrens Steyerm. = **N. decurrens**
Psychotria discolor (Griseb.) Rolfe = **N. discolor**
Psychotria dosbocensis Dwyer = **N. capacifolia**
Psychotria dudleyi Steyerm. = *Notopleura* sp.* (see discussion under *N. epiphytica*)
Psychotria dukei Dwyer = **N. dukei**
Psychotria epiphytica K. Krause = **N. epiphytica***
Psychotria fernandezii Steyerm. = **N. fernandezii**
Psychotria ferreyrae C. M. Taylor = **N. leucantha**
Psychotria guadalupensis (DC.) Howard = **N. guadalupensis***
Psychotria guadalupensis subsp. *grosourdieana* (Baill.) Steyerm. = **N. guadalupensis subsp. grosourdieana***
Psychotria guadalupensis subsp. *tetrapyrena* (Urb.) Steyerm. = **N. guadalupensis subsp. tetrapyrena***
Psychotria guadalupensis subsp. *venezuelica* Steyerm. = **N. guadalupensis subsp. venezuelica***
Psychotria hartwegiana Standl. = **N. marginata**
Psychotria hartwegii Benth. = **N. marginata**
Psychotria humensis Steyerm. = **N. humensis**
Psychotria killipii Standl. = *Notopleura* sp.* (see discussion under *N. pithecobia*)
Psychotria lassula Standl. = **N. epiphytica***
Psychotria laevis DC. = **N. uliginosa**
Psychotria laevis var. *angustifolia* Benth. = **N. uliginosa**
Psychotria lateralis Steyerm. = **N. lateralis**
Psychotria lateriflora Standl. = **N. lateriflora**
Psychotria longipedunculata Dwyer (nom. illeg.) = **N. longipedunculata**
Psychotria longipedunculoides C. M. Taylor = **N. longipedunculata**
Psychotria longissima Standl. = **N. longissima**
Psychotria macrophylla Ruiz & Pav. = **N. macrophylla**
Psychotria macrophylla subsp. *albacostata* (Rusby) Steyerm. = **N. macrophylla**
Psychotria macrophylla var. *angustissima* Standl. = **N. angustissima**
Psychotria macrophylla subsp. *anomothyrsa* (K. Schm. & Donn. Sm.) Steyerm. = **N. anomothyrsa**
Psychotria macrophylla subsp. *anomothyrsa* fo. *tomentella* Steyerm. = **N. macrophylla**
Psychotria macropodantha Standl. = **N. macropodantha**
Psychotria maxonii Standl. = **N. maxonii***
Psychotria merumensis Steyerm. = **N. merumensis***
Psychotria micayensis Standl. = **N. micayensis**
Psychotria microbracteata Steyerm. = **N. microbracteata**
Psychotria morii Dywer = **N. siggersiana**
Psychotria multiramosa Steyerm. = **N. multiramosa***
Psychotria nicotianifolia M. Mart. & Gal. = **Hoffmannia nicotianifolia** (M. Mart. & Gal.) L. O. Wms.
Psychotria orchidearum Standl. = **N. epiphytica***
Psychotria orchidearum subsp. *persedens* Dwyer = **N. peperomiae***
Psychotria palestinae Standl. ex Steyerm. = **N. palestinae**
Psychotria paramorum Standl. = **N. epiphytica***
Psychotria parasitica Sw. (nom. illeg.) = **N. guadalupensis***
Psychotria patria Standl. & Steyerm. = **N. patria**
Psychotria patria var. *tovarensis* Steyerm. = **N. patria var. tovarensis**
Psychotria pendula (Jacq.) Urb. = **N. guadalupensis***
Psychotria pendula subsp. *grosourdieana* (Baill.) Urb. = **N. guadalupensis** subsp. **grosourdieana***
Psychotria pendula subsp. *tetrapyrena* Urb. = **N. guadalupensis** subsp. **tetrapyrena***
Psychotria pendula subsp. *trinitensis* Urb. = **N. perpapillifera***
Psychotria peperomiae Standl. = **N. peperomiae***
Psychotria perpapillifera Steyerm. = **N. perpapillifera***
Psychotria perparva Dwyer = **N. perparva**
Psychotria phytolacca DC. = **N. uliginosa**
Psychotria pithecobia Standl. = **N. pithecobia***
Psychotria plagiantha (Standl.) C. M. Taylor = **N. plagiantha**
Psychotria polyphlebia Donn. Sm. = **N. polyphlebia**
Psychotria saulensis Steyerm. = **N. saulensis**
Psychotria semimetralis K. Krause = **N. epiphytica***
Psychotria siggersiana Standl. = **N. siggersiana**
Psychotria standleyana Steyerm. = **N. standleyana**
Psychotria subimbricata Steyerm. = **N. subimbricata**
Psychotria sucrensis Steyerm. = **N. sucrensis**
Psychotria tapajozensis Standl. = **N. tapajozensis**
Psychotria terepaimensis Steyerm. = **N. terepaimensis**
Psychotria thesceloantha Steyerm. = **N. thesceloantha**
Psychotria tolimensis Wernham = **N. tolimensis**
Psychotria tonduzii Standl. = **N. tonduzii**
Psychotria uberta Standl. & Steyerm. = **N. uberta**
Psychotria uliginosa Sw. = **N. uliginosa**
Psychotria uliginosa var. *discolor* Griseb. = **N. discolor**
Psychotria victoriae Dwyer (nom. illeg.) = **N. tolimensis**
Psychotria wilburiana Dwyer = **N. wilburiana**
Psychotria xerococcoides Dwyer = **N. panamensis**
Uragoga grosourdieana Baill. = **N. guadalupensis** subsp. **grosourdieana***
Uragoga leucantha K. Krause = **N. leucantha**
Uragoga uliginosa (Sw.) Kuntze = **N. uliginosa**
Viscoides pendulum Jacq. = **N. guadalupensis***

Volume 88, Number 3, pp. 373–516 of the ANNALS OF THE MISSOURI BOTANICAL GARDEN
was published on September 17, 2001.